FREU ARY 1955

ARTISAN

WARM AIR HEATING
RESIDENTIAL AIR CONDITIONING
SHEET METAL CONTRACTING



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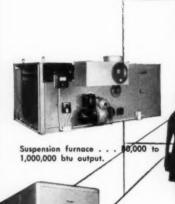
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COMPLETE CONTENTS

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IN SUBURBAN SHOPPING CENTERS...the trend is to

JACKSON & CHURCH FURNACES



Powerated furnace . . . 380,000 to

Learn more about "America's Largest and Most Complete Warm Air Heating Line" from the stocking jobber nearest you or write to our factors. New York, Pennsylvania, Illinois, Michigan . . . in these states and many moke, shopping center architects, contractors and owners have selected versatile Jackson & Church warm air furnaces.

BECAUSE THEY VE FOUND AN INDIVIOUAL CENTRAL HEATING SYSTEM WITH J-C FURNACES:

- ... provides an even distribution of air throughout the shopping area with inconspicuous ducts to take the heat where it is needed. Chilly floors, common with other types of heating, are unknown.
- ... eliminates noisy, unsightly heating units overhead that blast air into the faces of customers and heat only the upper portions of the room.
- ... permits easy addition of cooling units—either during or after installation of the furnace—since ducts and other facilities are basic with warm air systems.
- ... gives as many as seven air changes per hour by blending fresh air with room air (impractical with other types of heating).
- ... is automatically controlled to guard against uncomfortable temperatures during peak traffic loads. Store customers and employees are kept comfortable and satisfied.

JACKSON & CHURCH CO. SAGINAW, MICHIGAN

Work well done since eighty-one

"good reason for the different shapes"







UTILITY'S HORIZONTAL AND VERTICAL FURNACES

No matter where, no matter why, there's a specially-designed Utility forced-air furnace to fit the job. Utility's engineers have created units that operate just as effectively in horizontal or vertical positions.

For space-saving efficiency, where quality counts, Utility's vertical furnace takes honors. In capacities of 70, 85, 100, 135, 165 and 200,000 BTU, it can be installed in closet, alcove or service porch.

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Whatever the shape, these furnaces have automatic controls, carry a certificate of guarantee and are completely self-contained. All AGA approved.





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See the complete UTILITY heating and air conditioning line now

GAFFERS & SATTLER And OCCIDENTAL Automatic Gas Ranges

Furnaces • Air Conditioners
Air Coolers • Water Heaters

a happier living family tree . . all branches of



UTILITY APPLIANCE CORP., Dept. AAH-2 4851 S. Alameda St. • Los Angeles 58, Calif.

Please send me full information on:

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- ☐ Utility Cooling Equipment
- Utility Automatic Gas Water Heaters

NAME_

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ARTISAN FEBRUARY 1955

FEATURES

Sheet Metal Contractor's Success Formula	80
Organizing Your Air Conditioning Department	83
Heating Standards for Successful Bidding	87
Fabricating a Stainless Steel Conveyor	90
Report on "Air Conditioned Village"	93
Zone Air Conditioning Meets Complex Needs	94
Developing a Round Cornered Exhaust Hood	97
Heating Business Grows With Greenhouse Crops	100
Dealer Adjusts to Housing Project Market	102
Planned Merchandising Boosts Sales	112
Ohio Heating Dealers Attend Management Clinics	117
"Reminders" Sell Central Air Conditioning	120
Dealer's Rights in Equipment Repossession	127

BRIEFS

Rising	Labor	Force	Needs	Risk	Capital		0				92
Larger	Homes	Built	in '54			 					109

DEPARTMENTS

The Editor's Notebook	6
What's Happening	19
Washington Letter	29
What the Associations Are Doing	47
Equipment Developments	59
Editorial: Don't Waste Your Earnings	79
Hugh Reid's Pattern Problem	97
You and the Law	27
New Literature 1	48
We Hear That 1	51
Appointments 1	57
Index to Advertisers	66

Founded 1864

Volume 92 No. 2

WARM AIR HEATING RESIDENTIAL AIR CONDITIONING SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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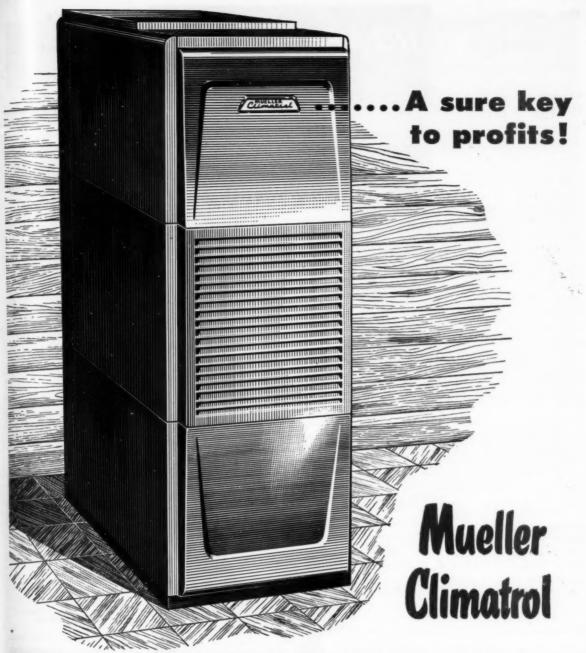






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3, 1879. Additional entry at Mendota, Ill.



The Most Complete Line

A Deluxe Line for custom homes, modernization jobs; highboys, lowboys, companion units.

The Suburbaneire Line for competitive jobs, housing projects: gravity, counterflows, horizontal, highboys, lowboys. A Commercial Line of unit heaters, boilers and packaged air conditioners in a wide range of sizes.

A Conversion Line of add-on cooling, conversion burners, incinerators, blower-filter units; a recessed summer conditioner.

A Cooling Line second to none. Air cooled and water cooled in wide range of sizes — deluxe units, packaged units, add-on units, self-contained and remote units.

What does Mueller Climatrol offer that others can't?

Just check these Mueller Climatrol "keys to profits." The most complete line of heating and cooling equipment • Advanced design • Matchless engineering • Rugged, quality construction • Handsome, compact styling • National "Brand Name" advertising • Strong local dealer merchandising • Factory sales, engineering, service and promotional assistance • Most important, interest in seeing that you, as a Mueller Climatrol dealer, make money.

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D-181



NEARLY 100 YEARS OF MANUFACTURING QUALITY COMFORT EQUIPMENT

the editor's notebook

Thumbing Through This Month's Artisan

. . . we visit the establishment of a warm air heating dealer who has expanded his operation to include air conditioning in Housing Projects - A Fertile Air Conditioning Field by Robert Welch. The author shows how the organization has geared its business including a change in name - to a mass market air conditioning field, through aggressive promotion, streamlined facilities for expediting order filling, and rigid cost controls.

Fabrication . . .

AND WE GET some pointers on the intricacies of Fabricating a Stainless Steel Powder Conveyor System at L. O. Johnson Sheet Metal Co., Chicago, specialists in fabricating complicated fittings with standard shop equipment. We see such problems as variations in systems, cleaning complications and location of floor joists overcome as a matter of course, and we understand the reasons why the company enjoys a lot of repeat business.

Zoning . . .

AND WE ARE shown why a Dealer Prescribes Zone Air Conditioning for Medical Center installation which presented a comfort problem because of its layout and varying heating and cooling requirements. Dividing the building into five zones, each served by its own furnace and cooling package provided an ideal solution and opened a door to another market in this field for warm air heating dealers.



the editor's

notebook

(continued)

Standards . . .

AND WE BEGIN a series of timely articles which will equip the dealer with a set of heating standards adaptable to specific structures under varying conditions. Authors S. Konzo and H. T. Gilkey advise dealers: Before You Bid - Know the Standards for Your Heating Installation, and proceed to establish the groundwork for the presentation, discussing heating performance factors, heat losses and other approaches to enable the dealer to provide equipment and installation techniques superior to present practices.

Reminders . . .

AND WE SEE how the proverbial 'Foot in the Door' Sells Central Air Conditioning; the foot, in this case, being a dual thermostat and other suitable equipment installed at the time of sale of a central heating system. Author H. B. Safford points out the value of this type of reminder to the homeowner that installation of a cooling unit is only waiting for his approval.

Steel Industry Fights Air Pollution

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AREI

THE AMERICAN Iron and Steel Institute reports that steel companies are more active and successful in their drive against air pollution than ever before. Through its research programs conducted in cooperation with the steel companies, the institute says, devices have been developed for determining the source of any air pollutant, measuring its severity and tracing it to its source. The equipment installed by steel plants for air control is com-



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NO. 80
Aspirating perimeter sidewall diffuser.



NO. 512 Perimeter floor register.



\" vertical fin sidewall multiple louver register for commercial air conditioning.



NO. 99 Out-of-wall or in-the-wall aspirating perimeter register.



MIDCO'S BALANCED FLOW BASEBOARD PERIMETER DIFFUSER #900



COMPLETE LINE OF REGISTERS

REGISTERS

FLOOR FACES

STILL OPEN

SOME JOBBER OUTLETS

YES! Beauty and Performance unmatched... with a more profitable turnover for you!

It's the Midco jobber's success story all over again! This time with two diffusers boasting of an ultra-modern design—amazing effectiveness—and conveniently adjustable, no draft blades.

Midco's ceiling diffuser No. 100 is available in 6'' - 8'' - 10'' - 12'' and 14'' sizes. Midco's baseboard diffuser No. 900 comes in 17'' - 24'' - 30'' and 36'' sizes.

Yes—Midco's Diffusers combine an engineer's dream of design with a jobber's idea of price . . . creating more profits for you!

Why not invest the next few seconds in a postcard to Midco. Ask why Midco jobbers and installers make consistently better livings!

REGISTER CORPORATION

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1059 GRAND AVE., ST. PAUL 5, MINNESOTA

the editor's notebook

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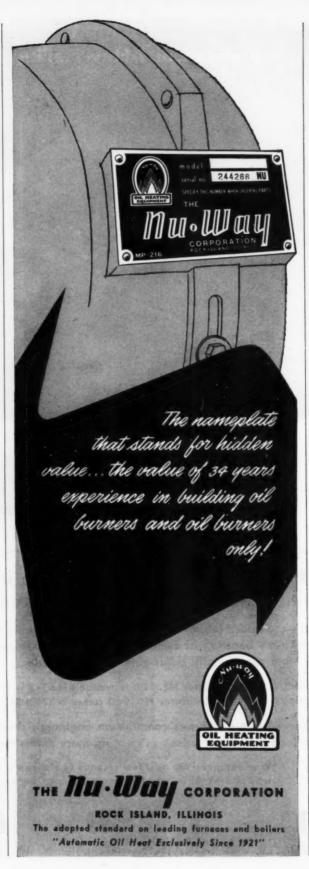
plex and expensive, the institute points out. "The companies in one steelmaking community spent \$4.3 million in a three year period for new facilities contributing to cleaner air," it says. "A plant in another area invested \$600,000 in four precipitators for its open hearth stacks." Still another company, it notes, maintains three greenhouses and a staff of naturalists and makes periodic surveys of plant life over a 1600 sq mile area in connection with its program to help keep the air clean in its community. The greenhouses are used to experiment with the effects of possible air pollutants on plant life, so the company can be sure its operations do not affect agriculture in the area.

Requests Increase in AC Motor Capacity

I NOTE that the Kansas City chapter of the American Society of Heating and Air-Conditioning Engineers has voted to ask the Kansas City Power & Light Co. to raise the size limitation on single phase residential air conditioning motors. The resolution provides that the size limitation "should be raised sufficiently to permit installation of air conditioning units of 3 ton nominal capacity."

New Word in Industry's Lexicon

"AUTOMATION" — a word until recently considered by many as too fancy for practical use — has attained acceptance in the lexicon of industry. A survey conducted among engineers, technicians and industrial executives in 10 major industry groups for the Industrial Div., Minne-



the editor's

notebook

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apolis-Honeywell Regulator Co., found "automation" was the favored word of 82 percent of those questioned when they sought to describe automatically controlled operations.

Has Been Reading Artisan for 30 Years

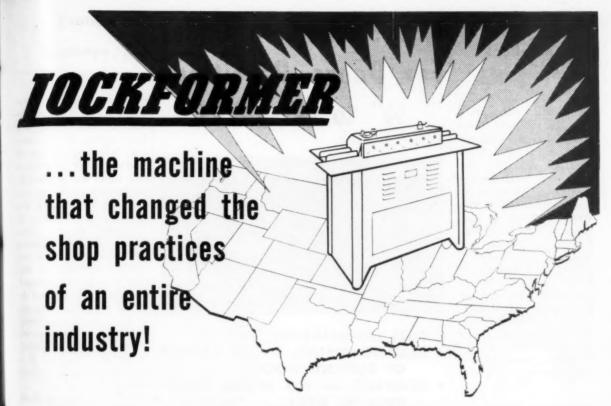
We're sorry to lose H. A. Byrer as a subscriber, but we appreciate the sentiment with which he leaves us. "I have taken your magazine for over 30 years," he writes, "and have always found it enjoyable reading. It's been a real 'profit-maker' for me. I'm enclosing my remittance for a three year subscription and ask that you send future copies to J. W. Byrer at Pierceton, Ind."

Nominate Dealer For City Clerk

WE NOTE Chicago Republicans have nominated John L. Waner for the post of city clerk. Mr. Waner - owner of City & Suburban Heating & Sheet Metal Co., Inc., whose operations were described in a recent issue of American Artisan - has been engaged in civic and community activities for some time. Here's one energetic dealer who has found that participating in community affairs and maintaining a private business is a highly successful combination.

Canadian Association Honored by ATAE

WE'RE GLAD to know the Canadian chapter of the National Warm Air Heating and Air Conditioning Association has received recognition for its outstanding work in the trade association field. A certificate of recognition recognition for the condition of the condition field.





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for enerChances are, your apprentices and younger journeymen never saw a Pittsburgh made except on a Lockformer.

Yet prior to 1937, all seams were slowly (and expensively) made on brakes or bar folders. In the relatively few years since the first Lockformer this one-time "miracle" machine has become commonplace—the "new" way to make seams has become the accepted standard...so much so that the "old" way is almost forgotten!



If you're not familiar with all of the time and money saving shop equipment made by Lockformer, take a minute or two to look at the new Lockformer catalog. Write for your free copy, today!





THE LOCKFORMER CO.

the editor's

notebook

(continued)

nition was recently awarded the Canadian group for its entry in the 1954 distinguished service awards contest conducted by the American Trade Association Executives, an "association of associations." The awards jury was composed of Sinclair Weeks, Secretary of Commerce of the United States; Richard L. Bowditch, president, U. S. Chamber of Commerce; Harold C. Mc-Clellan, president, National Association of Manufacturers; Dr. George W. Robbins, dean of the school of business administration, University of California; and Neil H. Borden, president, American Marketing Association.

More Homes to Have Central Air Conditioning

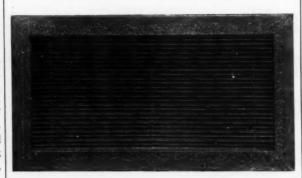
THE NATIONAL Association of Home Builders says air conditioning is definitely on the upswing. One out of every eight new homes this year, NAHB predicts, will be centrally air conditioned.

Taking a longer view, John A. Gilbreath, manager of the air conditioning division of Westinghouse Electric Corp., forecasts an increase of 1000 percent in the next 10 years in the sales of air conditioners for residential, commercial and industrial uses. In the residential market alone, he says, 50 percent of the new homes to be built within the next decade will have central air conditioning.

Albert Gray Completes New Law Manual

ALBERT W. GRAY, who discusses legal matters every month in American Artisan, recently sent me a copy of his new book, *Purchase Law Manual*. The manual, written specifically for executives en-

NEW! Thin-Core Grilles For Doors—Partitions 4" to 34" Thick!



- CUTS INSTALLATION TIME 1/2!
- EASY TO INSTALL NO DANGER OF RUINING DOOR!
- COMPLETE NO WOOD MOLD-INGS TO ADD!



First Grille ever designed specifically for thin doors and partitions. Anyone can install it in just a few minutes time. No close tolerances required . . . almost a half-inch extra on sides for positioning. Telescoping auxiliary frame fastens to grille with posts and screws. Clamps tight. No holes to position. Practically no danger of ruining door. No wood moldings. All steel. Rattle-proof. No vision, with 80% free area. Available with or without frame, all sizes. Gray or tan prime coated, or Hammertone finish in gray or bronze

ACTUAL SIZE CROSS SECTION

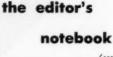
Write For Our Complete

FREE CATALOG

Listing Over 1000 Types and Sizes of Grilles for Every Requirement

A-J MANUFACTURING CO.

Dept. A-2 2119 Washington St., Kansas City, Mo.



(continued)

gaged in purchasing activities, does not, of course, pretend to replace your own legal counsel. It will, however, help keep you out of legal difficulties and aware of your rights and responsibilities in most purchasing situations. In his foreword, Stuart F. Heinritz, editor of Purchasing magazine, says. "From the overwhelming volume of written law and judicial interpretation, Mr. Gray has selected, arranged, condensed and explained the salient points affecting the work of purchasing agents. He has put them into the form of a compact manual, in layman's language. It is a comprehensive and reliable reference and guide."

The book, priced at \$6.00, is available from Conover-Mast Publications, Inc., 205 E. 42nd St., New York 17.

P. O. Discontinues One Type of Service

THE POST OFFICE is planning to scrap the simplified address system authorizing delivery of unaddressed bulk third-class mail on city routes which many dealers have been using in their direct mail campaigns. According to the Post Office, the service will be discontinued March 31, 1955.

Sees Rapid Growth In Gas Heating

JULIUS KLEIN, president of Caloric Appliance Corp., writes that new growth in the field of gas fired house heating may be expected at the rate of approximately 1, 200,000 installations a year for the next three years. Mr. Klein predicts close to 13 million homes in the United States will have gas heat by the end of the 1954-55 heating season.



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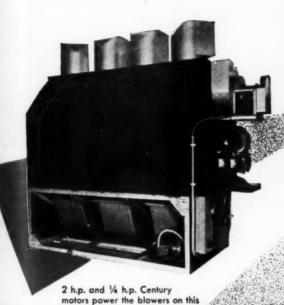
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popular, direct-fired unit

heater for commercial and industrial installation.

Two Century Motors installed on an Air Conditioning and Heating System in an office building.

400 TO 1/8 HORSEPOWER

Even years after you've made a Century motor-powered installation

Even years after you've made a Century motor-powered installation you'll continue to win praise from your customers for its quiet running and efficient operation.

Leading manufacturers of heating, ventilating and air conditioning equipment choose Century motors to bring out the best performance in their products. The wide range of Century motor sizes and types enables them to select exactly the right motor design and torque characteristics to do the job best.

For help with your motor problems—
replacement or new applications—consult the
Century Branch Office nearest you, or
conveniently located Century distributor.
A nationwide network of Century Service
Stations is always at your service to help
you keep your customers happy.



CENTURY ELECTRIC COMPANY

1806 Pine Street • St. Louis 3, Missouri Offices and Stock Points in Principal Cities

AMERICAN ARTISAN, FEBRUARY 1955

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813

the editor's

notebook

(continued)

GI Home Loans Up 25% in 1954

THE VETERANS Administration reports during 1954 veterans received more than 400,000 GI home loans an increase of 25 percent over 1953. VA expects the current high level of GI loan activity to continue through 1955.

Sheet Metal Firms Get SBA Loans

I was interested in the trend disclosed by a recent report from the Small Business Administration which shows that more and more small businesses are taking advantage of the advisory and financial services offered by SBA. Recently approved by SBA were 1061 loans to small companies engaged in various kinds of business, among them manufacturers of metal furniture, gas heaters, aluminum windows, sheet metal products, trailers, enamel steel signs and steel doors. The loans - both direct and participation - ranged from \$3000 to \$100,000.

Bright Outlook For Steel Production

FROM Joseph L. Block, president, Inland Steel Co., comes the prediction that — providing there are no serious strikes in the steel or automotive industries — "at least 100 million tons of ingots will be produced in 1955." This, he says, would be 80 percent of capacity and an index figure of 119, and would make 1955 the third highest year for steel production in our history.

According to the American Iron and Steel Institute, the steel industry started 1955 with an annual steelmaking capacity of 125,828,310 net tons of ingots and steel for



Such integral values as design, construction and performance give the Sundstrand line selling power backed by consumer acceptance.

The public hears about Sundstrand. They see Sundstrand. They buy Sundstrand.

Because: Ultimate heating satisfaction means having an oil burner with

- * DURABILITY
- * DEPENDABILITY
- * COMPACT DESIGN
- * OVERALL ECONOMY
- * OUIET OPERATION

These salient features result from 32 years of engineering and development by Sundstrand. Available is a complete line of oil burners for new installations or conversion. To increase your sales with Sundstrand,

write to-

SUNDSTRAND ENGINEERING CO.
ROCKFORD, ILLINOIS

the editor's

notebook

(continued)

castings. The new total, according to the institute, is the highest ever achieved. It is 1,497,900 tons more than the capacity a year ago.

More Workers Covered By Welfare Plans

According to union reports to the U. S. Department of Labor's Bureau of Labor Statistics, approximately 11, 290,000 workers were covered by some type of health insurance or pension plan under collective bargaining agreements early in 1954. The number of workers under collective bargaining affected by some type of benefit coverage had increased by more than 3,600,000 since mid-1950.

Wants Reprints Of AC Fundamentals Series

W. VIRGIL MILLER of the Bard Mfg. Co. wants to know if he can obtain three copies each of the articles in S. W. Reid's series on air conditioning fundamentals. This is a request frequently made by subscribers, and we are pleased to inform them that a booklet entitled Correct Practice in Residential Cooling is available which contains all articles published up to January 1954.

New Subscriber "Well Pleased"

NICE TO KNOW we can chalk up another satisfied reader. Carlton Knutson, heating dealer of Pelican Rapids, Minn. writes, "Have already received two issues on my subscription. Consider the Artisan a very fine publication."

Clyde M. Barner

BUT IN ALL SEASONS LUXAITE DEALERS ENJOY

Year 'Round Air Conditioning Units
... HEAT in WINTER... COOL in SUMMER



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BY 1955

2 Ton Unit with 100,000 B.T.U. Gas Input or, 84,000 B.T.U. Oil Output

> Unit with attractive burner enclosure



3 Ton Unit with 112,000 B.T.U. Oil Output or, 140,000 B.T.U. Gas Input



Either or BOTH-in ONE Compact Cabinet

Whether it's the complete all-season, Year 'Round installation that's wanted — or heating only, with appropriate ductwork provided for the addition of cooling in the future—you'll have the right answer with LUXAIRE!

You can install a Luxaire Year 'Round unit, equipped for heating only, now. Later, you can add the superior Luxaire cooling circuit that, easily and quickly, slides in to the same compact, attractive cabinet — when your customer is ready for cooling.

Either way, you're way ahead — with LUXAIRE!

Big Business

Every season can be a BIG SEASON — with Luxaire. NOW, to further improve the excellent competitive position you already enjoy with Luxaire's complete line of winter, summer and Year 'Round air conditioners, there are new units — to meet every possible home application — that will be announced soon.

- Counterflow models of the Year 'Round unit, in two desirable sizes — 2 Ton Cooling, 100,000 B.T.U. Heating: 3 Ton Cooling, 140,000 B.T.U. Heating.
- 2. Higher capacity Year 'Round Units, with 5 Ton Cooling Capacity matched to (1) 140,000 B.T.U., (2) 175,000 B.T.U., or (3) 220,000 B.T.U. Heating Capacity.
- New Air Cooled Refrigeration Circuits, with Compressor located some distance from Cooling Coil. Air Cooled Circuits will be available for both the Year 'Round and Addon A.C. Units.

Luxaire is priced to meet and beat competition. Let your Luxaire Jobber explain the profit advantages you'll gain with Luxaire.

Most Units
Are Approved
To Burn
Gas or Oil
with Equal
Efficiency



Winter Air Conditioning Jnits approved for either Gas or Oil.

Counterflow Units approved for either Gas or Oil.



Utility Units approved for either Gas or Oil



Gravity
Furnaces
approved for
either Gas
or Oil.





Summer Cooling Units 2 · 3 and 5 Ton.

> Incinerators with or without Gas Burner



Unit Heaters Gas Fired 4 Sizes



108

Horizontal Furnaces
Gas Fired . . . Oil Fired
Gas Conversion
Burners 3 Sizes

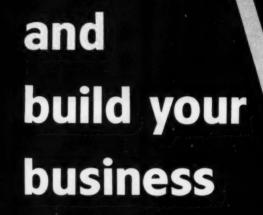
THE C. A. OLSEN MANUFACTURING COMPANY . . ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

AMERICAN ARTISAN, FEBRUARY 1955

BIG"MR B

AUTHORIZED BRYANT HOME COMFORT DEALER



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of these ways

The SELLING line of automatic heating air conditioning water heating

bryant



a name your customers know and want

For 46 years THE name in automatic home comfort. Over 5,000,000 units in use. A great asset for the dealer who displays the Bryant Home Comfort sign!



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quality equipment for every market

Deluxe units for discriminating customers . . . standard units for the mass "new-home" market.

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Famous Bryant quality

—Bryant engineering

excellence—in both
lines...down the line!

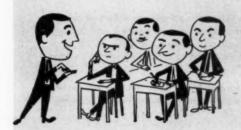
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exceptional distributor service

for Bryant Distributor is near at hand ad ready with complete engineering,

sales and service assistance to help you sell and install the complete Bryant line—profitably. He's there to serve you; it pays to know him well!



purpose, every purse-

from one source!

professional sales training

Organized factory classes
—comprehensive field
schools—conducted by a
full-time professional
staff. For all qualified
Bryant dealer personnel.



personalized selling tools

The most complete and completely practical selling literature lineup in the

industry — including
Bryant promotional letters, folders, displays,
etc. . . . designed and
printed especially for
your own use.



di-color national ads featuring YOU

telling your customers that you are "Mr. B"—the man to see for top quality home heating, air conditioning and water heating... Bryant, of course!



co-op "Mr. B" ads in your local newspaper

Focusing the full power of Bryant's sales-getting program on your customers, over your name, in your own community. Be a power...be "Mr. B"!

Be "Mr. B"—Mr. BIG in the big home heating, air conditioning and water heating business. Only Bryant enables you to be "Mr. B"
... to build your business all 8 of these practical, profitable ways. For bigger profits now, for a secure and prosperous future—see your Bryant Distributor! Ask him about Bryant's big "Mr. B" action program, and how it can make sales and money for you.

New Sidewall and

• REVOLUTIONARY ALL NEW SERIES 200

with 100% Adjustability

- HANDLES SUMMER AIR CONDITIONING OR WINTER HEATING AIR PATTERNS WITH EQUAL EFFICIENCY
- POSITIVE SHUTOFF
- AMAZING NEW SOLID SECTION LOUVER DESIGN CURVED FOR SUPER AIR CONTROL

Another Titus first. A high sidewall and ceiling grille test proven to handle the complex demands of modern heating and cooling. Stamped register designs simply cannot compete. Grille is so efficient it makes any forced air heating or cooling system perform with superior efficiency.

Don't jeopardize the performance of your heating or cooling installation with unflexible stamped registers. Install Titus high sidewall and ceiling grilles.

5 IMPORTANT APPLICATIONS

(1) FOR OVERHEAD FORCED AIR SYSTEMS (2) FOR HIGH SIDEWALL INSTALLATIONS (3) FOR REPLACEMENT OF OUTMODED WARM AIR REGISTERS WHEN COOLING IS ADDED (4) FOR REPLACEMENT OF INEFFICIENT OUTLETS IN PROBLEM AREAS TO CORRECT CHILLING OR UNCOMFORTABLE DRAFTS (5) FOR BRINGING IN OVERHEAD AIR CONDITIONING WHERE STEAM OR HOT WATER ARE PRESENTLY USED.

Underbid your competitors with these new 200 series grilles. Give customers quality that cannot be duplicated; air performance that is absolutely superior. Add to your immediate profit picture. Write for complete details now.

REVOLUTIONARY AIR DIRECTING PERFORMANCE ALMOST ELIMINATES DUCT COST IN OVERHEAD SYSTEMS

designed by Spec.

Ceiling Frille

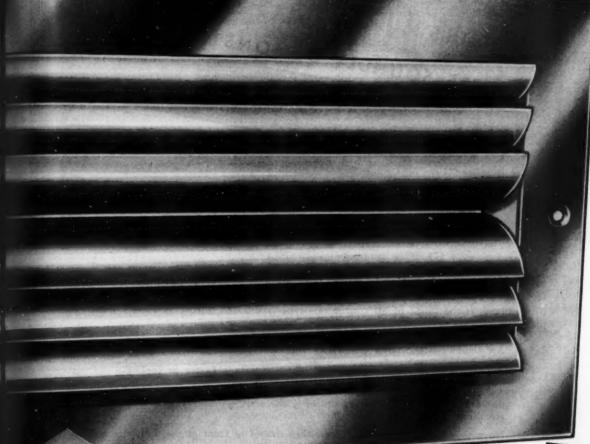


Diagram shows flexibility of 200
Series high sidewall and ceiling grille.
Air may be directed along ceiling or forced
down into the room proper at angle desired.
Made for either 1, 2 or 4-way diffusion.

FREE CATALOG

CLIP and MAIL COUPON TODAY!



TITUS, INC., WATERLOO, IOWA

Gentlemen: Please rush me complete new catalog, price lists and discounts on the new 200 Series Sidewall-Ceiling Grille.

Name

Company

Address

City

State

AMERICAN ARTISAN, FEBRUARY 1955

17



Carefully and scientifically engineered to show exactly what happens in an actual installation of the H&C No. 44 series Diffusaire, our display at the International Heating & Ventilating Exposition clearly demonstrated to those who viewed it, that this, indeed, is the finest of all continuous type baseboard diffusers. Here's what they saw:

- 1. An airflow pattern that completely blankets the wall for thorough comfort.
- 2. An exceptionally bigh throw a mighty important factor in cooling.
- 3. An airflow in which the clean, filtered air hugs the wall and thus prevents the dirt-laden secondary air from touching the wall the major cause of wall streaking.
- 4. No noticeable movement of drapes when drawn in front of the diffusaire and no change of room temperature.
- Decorated in the same color as the adjacent wall, the diffusaire is almost undetectable, a quality every homeowner appreciates and every diffuser manufacturer has sought to achieve.
- 6. No tools are required to install the No. 44 and no disassembly prior to installation is necessary.

If you haven't seen it, drop in soon on your H&C Jobber. It's the best of its type for both you and your customers.



Apprentices to Vie for Honors in Annual Contest

THE NATIONAL Joint Sheet Metal Workers Apprenticeship Committee reports that its 1955 apprenticeship contest, conducted under the sponsorship of the National Sheet Metal Contractors Association and the Sheet Metal Workers' International Association, is now in full swing. The contest began on February 1, will close March 15. It is open to first and second year apprentices. All apprentices who have not completed two years and not more than 4000 hours of apprenticeship training before March 15, 1955 are eligible to enter.

All contestants are requested to make their entries through their local joint apprenticeship committees by sending their names and addresses and the names and addresses of their employers to the local joint apprenticeship committee as soon as possible. Applications for entry forms should be made by local joint apprenticeship committees to the secretary of the National committee, Joseph J. Kaber-

lein, 5911 N. Mobile Ave., Chicago 30. In localities where there is only a small number of apprentices and where there is no joint apprenticeship committee, the apprentices who wish to enter the contest may select one or more local contractors and an equal number of journeymen, preferably officers of the local union, who will act as a committee for conducting the local contest and for selecting the entry for the national contest. Each local committee must mail the actual fitting made by the local winning contestant to Secretary Kaberlein not later than March 15. The winners from various localities will then compete for the grand national prize awards. Among the prizes offered will be an engraved plaque bearing the name of the first place winner. Second and third place winners will receive similar plaques. Each winner and those given honorable mention will receive a certificate of recognition.

Ratio of Gas Reserves To Production Declining

"In considering the problem of future supplies of natural gas, one of the prime factors is the status of known and proved reserves," the National City Bank states in its monthly letter on business and economic conditions. Despite the rapid increase in production in recent years, the letter points out, estimated proved recoverable reserves have been increased by discoveries of new fields, extensions of known fields, and upward revisions of prior estimates. At the end of 1953 the proved reserves of natural gas in the nation were 211 trillion cu ft, up 32 percent since 1946.

While this increase may appear gratifying, it represents a rate of

growth less rapid than that of production. In 1953 net production amounting to 9.2 trillion cu ft was 87 percent over 1946. As a result of consumption increasing at a faster rate than reserves, the ratio of proved reserves to annual production has gone steadily downward. Moreover, substantial concentrations of proved reserves sufficient in size to warrant construction of large pipeline projects are already dedicated to the market under existing contracts. It will require the discovery of new supplies to meet the constantly swelling demands of new and old customers.

The increase in use of natural gas has been spread widely throughout the country. There are now only four states — three in the Pacific Northwest and Vermont — which do not have natural gas.

SBA Offers Aid On Records Management

ELIMINATION of up to 60 percent of paperwork costs and a one-third reduction in present business records is possible if a business owner or proprietor adopts an efficient system of records management, according to the Small Business Administration. Records Management in Smaller Business, recently issued by the SBA, discusses records management programs from a practical viewpoint. The pamphlet is first in a new series, Small Marketers Aids, developed by SBA for retailers, wholesalers and service trades. It may be obtained upon request from all SBA field offices.

Sees Another 3 Million GI Loans Issued

More than three million more veterans are likely to get GI loans according to an estimate contained in the report entitled GI Loans, the First Ten Years, recently released by the Veterans Administration. The report records the legislative and administrative history of the GI loan program that has thus far enabled more than 31/2 million veterans to borrow more than \$23.5 billion for homes and businesses. In estimating that more than three million more veterans will use their GI loan benefits. VA said it seems reasonable that at least a million more loans will be made to World War II veterans and at least two million to veterans with service since June 27, 1950.

Committee Studies Wiring Requirements

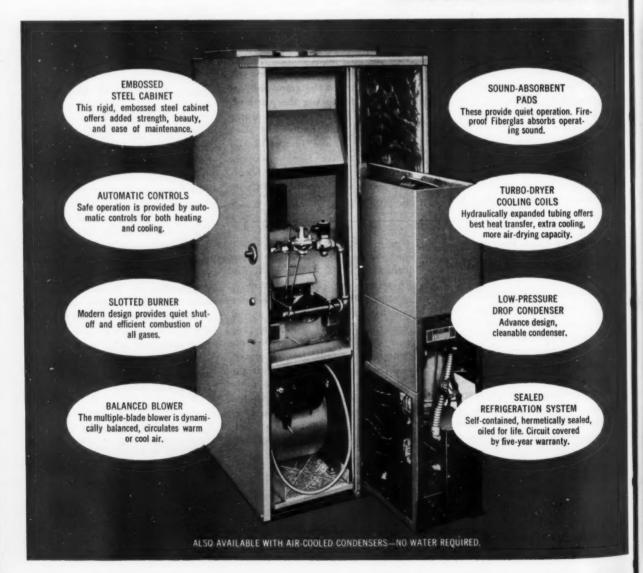
To STUDY THE NEED for providing better wiring facilities in homes at the time of construction, an industry committee on interior wiring design met recently with FHA officials in the agency's Washington headquarters.

(Continued on page 22)

At last! Central Year Round Air-Condition

Great new profit

RHEEN



oning Priced Right For Low-Cost Homes

opportunities with the

Year Rounder

The Rheem Year 'Rounder opens a whole new market for year 'round home air-conditioning equipment. Smart heating contractors and dealers are getting on the bandwagon now to take advantage of this great new sales opportunity.

The Rheem Year 'Rounder provides central air-conditioning efficiently and economically. That means it is now practical and profitable to install central year 'round air-conditioning in even the smallest homes—and that's your big new market.

Builders realize the tremendous sales advantage their homes will have if they are air-conditioned. That's why you'll have an easy time selling the Rheem Year 'Rounder. And the name "Rheem" enables you to sell with confidence, for it is your assurance that the Year 'Rounder is a quality unit, made by one of the world's foremost manufacturers of home heating appliances and air-conditioning equipment.

The Rheem Year 'Rounder is so compact that it can be installed in practically any floor plan. The smaller sizes are designed for zone cooling (see illustration at upper right). Larger sizes will cool an entire home.

So make this year your year with the Rheem Year 'Rounder. It's your chance of a lifetime to take advantage of a brand-new market for air-conditioning equipment. Send for full details today.

YOU CAN RELY ON

1955



1225 Lockwood Drive, Houston, Tex.; 7600 S. Kedzie Ave., Chicago, III.; Sparrows Point, Md.; 3693 E. Marginal Way, Seattle, Wash.; 4361 Firestone Blvd., Southgate, Calif.; Rheem International (Canadian Sales), 477 Madison Ave., New York, N.Y.



Zone cooling means cooling rooms when they are most actively used—the living quarters in the daytime and the sleeping quarters at night. Saves on operating costs as well as on original investment. The Rheem Year 'Rounder line provides models that are designed for this type of installation.



Sales-minded builders know the houses that sell fastest in 1955 will be air-conditioned. You can provide air-conditioning for every house they build with the new Rheem Year 'Rounder. Don't miss out on this tremendous sales opportunity.

GET THE FULL STORY

Please send com Rounder.	plete information on the Rheem Year
NAME	TITLE
FIRM	
ADDRESS	
CITY	ZONESTATE
	THIS COUPON AND MAIL TO

FILL OUT THIS COUPON AND MAIL TO NEAREST REGIONAL OFFICE or to Rheem Mfg. Co., 7600 S. Kedzie, Chicago, Illinois

Business Men Optimistic About Conditions For '55

Business men expect a definite upturn in the first quarter of 1955, according to the results of a survey completed recently by Dun & Bradstreet, Inc. In the survey, 1309 business executives, comprising a crosssection of the nation's larger and medium sized manufacturers, wholesalers and retailers were asked whether their sales, profits, inventories, prices and number of employees are expected to be higher, lower or the same compared with the first quarter of 1954. Manufacturers were asked also to give their expectations as to their new orders.

The survey shows 56 percent of the executives look forward to higher sales and 43 percent expect larger net profits after taxes, comparing the two first quarters. Lower sales are anticipated by 13 percent of the businessmen and smaller net profits

Studies Wiring Needs

(Continued from page 19)

The members agreed to submit proposals for revising the electrical requirements for new homes with FHA-insured mortgages. Neil A. Connor, director of FHA's Architectural Standards Division, pointed out that the increasing home use of electrical equipment and appliances has made it imperative that the "needs of tomorrow" be recognized. He said today's new homes require properly installed home wiring systems which will provide sufficient electric current for adequate illumination and for safe and efficient operation of electrical equipment. All branches of the electrical industry are represented by the membership of the industry committee, as well as the National Association of Home Builders and the American Institute of Architects.

are expected by 12 percent. No change in the direction of sales is expected by 31 percent of the concerns surveyed, and 45 percent are of the opinion that the level of their earnings will be about the same.

Slightly more executives are projecting increases than decreases in the forthcoming levels of their inventories. The figures show that 24 percent of the concerns expect higher first quarter inventories, compared with the 1954 first quarter, while 23 percent anticipate decreases and 53 percent think there will be no change.

Majority expectations as to selling prices in the first quarter of 1955 are heavily of the view that prices will show no change, with 12 percent expecting that prices will be higher, 76 percent that they will be the same, and 12 percent anticipating lower prices.

While 79 percent of the business men interviewed expect to operate with the same number of employees, the 14 percent who believe they will be adding employees outnumber those who expect to reduce their employment levels by two to one.

Denver Orders Use Of Water Savers

THE DENVER water board has adopted a regulation which requires that certain heavy water users install water conservation devices at their own expense by next June 1. Specific devices cited were evaporative condensers, spray condensers and cooling towers.

Under the new rule, all cooling, heating and industrial processing systems installed after December 15, 1954 must be equipped with approved conservation devices. A conservation device, as defined by the board, is one designed to reclaim for re-use "at least 90 percent of water used for a

Study Home Insulation At Washington Meeting

AT THE REQUEST of FHA Commissioner Norman P. Mason, representatives of the insulation industry, home builders, the heating and refrigeration industries and manufacturers of window glass met recently in Washington to review FHA minimum requirements relating to insulation, with a view to providing better insulation for FHA-financed homes. Other objectives sought by the representatives of the insulation industry and allied fields are reduced residential operating costs during the heating season and, if the house is air conditioned, reduced costs during the cooling season. In addition to FHA architects and engineers, representatives of the following organizations attended the meeting:

Air Conditioning and Refrigeration Institute, Aluminum Corp. of America, Infra Insulation, Inc., Insulation Board Institute, Kaiser Aluminum and Chemical Corp.

Libbey-Owens-Ford Glass Co., National Association of Home Builders, National Bureau of Standards, National Mineral Wool Association, Owens-Corning Fiberglas Corp., Pittsburgh Plate Glass Co., Reflectal Corp., Reynolds Metal Co., Wood Fiber Blanket Institute, Vermiculite Institute and Veterans Administration.

cooling, heating or manufacturing purpose and which will enable the water so reclaimed to be likewise reused and further reclaimed."

The order further specifies that existing cooling systems having a capacity of less than two tons of refrigeration shall have been provided by February I with an "effective water regulating valve and positive shut-off valve which will shut off the flow of cooling water when the unit is shut down and will control the flow of cooling water to the minimum requirement at any load."



"I sold five out of the first five with the Armstrong Visualizer"

... says Armstrong Dealer Joe Grieshaber

The experience of Mr. J. J. Grieshaber, owner of Reading Heating Service at Reading, Ohio, is typical of many others. Maybe we can't do any better than to quote Mr. Grieshaber's letter, just as it was written. He says:

"Business has been good this fall, and our profit per sale is also up. Of course there are several reasons, but one, I think, is more responsible than all

the rest put together.

"It's the Armstrong Visualizer. I started out with a bang, with it. I sold five out of the first five prospects I tackled. I don't remember ever doing that before. My 'batting average' since, with the Visualizer, has been a whale of a lot better than it ever was before. I get the sales I used to see slide away for no good reason.

"I figure it's because the Visualizer helps me tell a good, logical story. With it, I can't get off the track. People like to see what's in a good furnace, too. The Visualizer shows them. They buy when

they see.

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1955

"I've quit meeting price cuts, too. That's why I'm making more money. I used to meet a price or lose a sale. Now I sell quality and value, and I get my price. People will pay more if they can see they'll get more. With the Visualizer, they can see.

"This Visualizer is the best thing anybody ever did for a furnace dealer. There's nothing else any-

where near it."

Looks like Mr. Grieshaber has the answer. Do you? If not, how can you do better than to look at an Armstrong Visualizer? Your Armstrong wholesaler will show it, gladly. You'll see how it shows, by means of transparent sheets, how a good furnace is built—how installation is handled—how heat is distributed—and how an Armstrong dealer services the furnaces he installs.

Call your nearby Armstrong wholesaler now. If you don't know him, drop a line to us for his name. Address Dept. AA. Be sure to inspect this leading

merchandising tool of the year.



WHY CRANE'S YEAR HAS TWO COMPRESSORS



Heats in winter—cools in summer. Gas or oil fired. Available in two-or three-ton size. Unusually compact. Furnace available without cooling system on special order.



Two compressors. One operates almost constantly, reducing cycling effect and holding humidity low. Second compressor cuts in only when full capacity is needed. Saves power.

ROUND AIR CONDITIONER (instead of the usual one)

...plus some other facts to convince you that Crane's low-priced Year 'Round Air Conditioner is easier to sell...to install...to service

Crane Year 'Round Air Conditioners have two compressors. One operates during moderately warm weather . . . the other only when it's really hot. The results are good news for customers: lower operating costs and constantly lower humidity than ordinary one-compressor air conditioners-(because moisture is removed only when the system is operating).

But that's only part of the story. The rest of the story is good news for you. Crane's Year 'Round Air Conditioner is almost as easy to install as a warm air system alone. It is shipped assembled in three

cartons. And there's no refrigeration work to worry about.

And, when you install a Crane unit, there are virtually no "call-backs" to nibble at your profit. The factory-sealed refrigeration system slides in and out of the cabinet easily, and is fully warranted under Crane's Five-Year Protection Plan.

The boom in year 'round air conditioning is here . . . and here is the unit that will help you make the most of it. Very small and compact . . . and one of the lowest priced units you can buy. See your Crane Branch or Crane Wholesaler soon.

One Convenient Source for Everything in Hot Water or Warm Air Heating



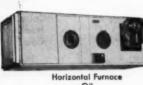






Gravity Furnace







Horizontal Furnace

General Offices: 836 S. Michigan Ave., Chicago 5, III.

CRANE STARTS

SECOND CENTURY

OF QUALITY

Founded July 4, 1855

... the industry's most complete

yearound air conditioning line

Duct TypeCooling Unit



Assure yourself profits 365 days a year. Offer your customers a choice of more than 140 heating and cooling units . . . all featuring the most modern developments and design . . . to fit any type or size house.

Get your furnaces, fittings and cooling units all from one source under one brand name . . . WILLIAMSON. Let us show you in detail how comparison proves WILLIAMSON selling superiority all year 'round.





Compressor Unit



Space Cooling Unit

Counter-Flow Heating and Cooling Unit

act for profits everyday!

THE WILLIAMSON HEATER CO.

Gentlemen: Rush me details on WILLIAMSON year 'round profits.

Name.....Title....

Firm.....

Address

City......State.....State.....

COMPLETE HEATING LINE . . .

- GASAVER and OILSAVER Deluxe Furnaces...1st really new feature in warm air heating in last quarter century. Lo-Boy, Hi-Boy, Gravity
- FLO-WARM Gas, Oil and Coal Furnaces . . . highest quality at price unmatched for value per dollar. Lo-Boy, Hi-Boy, Counter-Flow, Horizontal
- ASSEMBLED Gas and Oil Furnaces . . . WILLIAMSON quality at competitive prices—factory assembled, wired and tested. Lo-Boy, Hi-Boy, Counter-Flow, Horizontal.

COMPLETE COOLING LINE . . .

- ... WATERLESS AIRefrigeration with unsurpassed efficiency—featuring exclusive Counter-Flow or Duct Evaporator cooling that requires no additional floor space in a slab perimeter or basement house.
- ... WATER-COOLED Units that need only 2.7 sq. ft. of floor space.
- DUCT, PIPE AND FITTINGS for any Heating or Cooling System . . . die-cut, pre-fabricated.

Nationally Advertised in . .





Gasaver Lo-Boy



Oil Flo-Warm Horizontal



Assembled **Gas Horizontal**



Coal Flo-Warm





Oilsaver Lo-Boy



Gasaver Gravity



Assembled Gas Lo-Boy



Assembled Oil Lo-Boy



Assembled Oil Hi-Boy



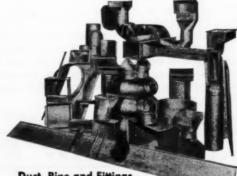
Assembled Oil Counter-Flow



Assembled Gas Hi-Boy



Gas Flo-Warm Lo-Boy

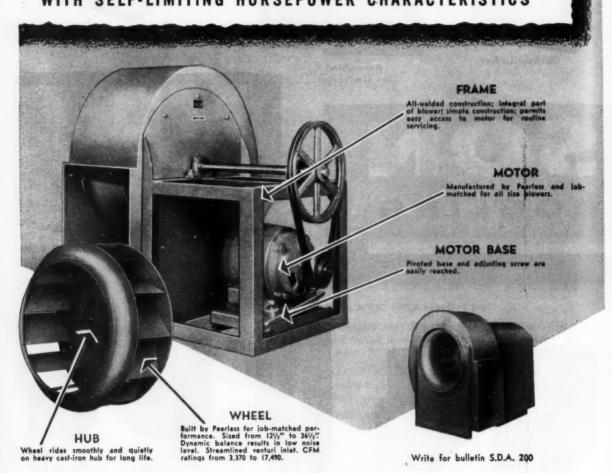


Duct, Pipe and Fittings



Oil Flo-Warm Hi-Boy

New PEERLESS Backward Curve Blower with self-limiting horsepower characteristics



• Here's the answer to better blower performance on the big jobs—schools, hospitals, office buildings, etc.—the new PEERLESS BACK-WARD CURVE BLOWER. It has the features engineers, wholesalers and contractors said they wanted most...greater CFM ratings... compactness in all sizes... increased efficiency...quiet operation.

Peerless design features give you a better blower which you can specify with complete confidence. Check them: Heavy cast-iron hubs for extra wheel support. Wheels with matching spun cones and streamlined venturi inlets that permit air to enter, pass and exit smoothly and quietly. Blowers sized to NAFM recommendations—from $12\frac{1}{2}$ " to $36\frac{1}{2}$ ". Ratings that are tested accurate. Self-limiting horsepower characteristics. With these Peerless features, you can engineer a job to perfection.

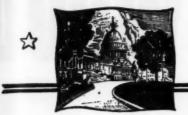
Write or call Peerless today for full information about the new Backward Curve Blower. You can get immediate delivery on all Peerless Fans and Blowers.

.. SMOOTHEST PERFORMERS ON THE WARKET.

FAN AND BLOWER DIVISION
THE PEERLESS ELECTRIC COMPANY

1405 WEST MARKET ST. . WARREN, OHIO

Peerless Electric



Washington Letter

A Buyer's Market — But a Good One

By Arnold Kruckman

- A census survey uncovers a large potential for modernization and sales
- A good year in '54 despite some setbacks proves the economic situation to be sound
- But the market must be created consumers have to be shown why they need your product

A TEST SURVEY of interest to dealers, manufacturers and contractors was made by the Bureau of the Census during the first five months of 1954.

Made on the initiative of the bureau without special financing by Congress, the survey covered an expenditure of three billion dollars by the nation's homeowners during the five month period. In its housing and construction reports covering alterations and repairs, issued near the end of 1954, the bureau estimates the \$3 billion was spent by about 18 million owners, representing about 70 percent of the total number of homeowners in the country.

Consumer Expenditures Suggest Market

Of special interest to the trade is a further breakdown which shows that of the 18 million who spent money on fixing up their homes, approximately 1,800,000 spent \$500 or more — and a substantial number spent over \$1000 — on repairs, alterations, replacements, improvements and additions to their property. While the bureau made no attempt to secure information on the amounts spent on any specific type of work undertaken by the homeowner, the information supplied suggests a huge market potential for the warm air heating, residential air conditioning and sheet metal contracting industries.

Those 1.8 million homeowners each spent enough, for example, to modernize their heating systems. Approaching the market from the point of view that \$500 is a lot of money to spend on improvement of appearance, the

warm air heating dealer should have no real trouble convincing a homeowner that a \$500 investment in comfort — furnished by a new or modernized heating system — represents a wiser outlay than an equal amount expended solely for the sake of appearance.

It is hoped that response to the trial survey will warrant an appropriation by Congress to make it an annual function of the Bureau of the Census. A more comprehensive survey supplying specific information about amounts spent for warm air heating, residential air conditioning and sheet metal contracting would be valuable ammunition for dealers to have in seeking business from the appropriate segment of the market. It is emphasized that the 1954 operation was purely a trial survey undertaken by the bureau in response to urging by those interested. The undertaking cost the bureau between \$50,000 and \$60,000 on the basis of a quarter year's expenditure. In other words, making the survey on an annual basis would require a disbursement of approximately \$250,000.

Of course, homeowners spent an increasing amount as the season changed from winter to spring. April fix-up expenditures were somewhat greater than the monthly average for January, February and March; and May expenditures continued up. For the first three months the amount was \$1.486 billion, or an average (mean) of \$495 million per month. In April and May the amounts were \$688 million and \$832 million respectively.

The amount of money spent for repairs and replace-

(Continued on page 32)

It's SAVINGS that make sales

It's here-ready to work for you! JOHN WOOD has a water heater story that's a natural for sales! BY ACTUAL TEST, John Wood Water Heaters cost your customers less per gallon for hot water . . . make savings no other construction can match! That's because the OFF-CENTER flue construction—developed and featured by JOHN WOOD-beats every known water heater construction for economy in test after test.

That one fact gives you a real edge on all your competitors. Nobody has an economy story like yours when you feature JOHN WOOD. Nobody has the profit chances you get with the proved JOHN WOOD economy story!

Here's potent sales material that can't miss! And it's backed up by the hardest hitting program of promotion and advertising yetall working for you and your bigger profits.

Ask your JOHN WOOD wholesaler for the full story-and climb aboard the wagon for more sales with the COMPLETE John Wood economy line.

Complete line of sizes and styles, vertical and table-top models.

Write for FREE Book "How Do You Judge A Water Heater"-Today!





TABLE-TOP





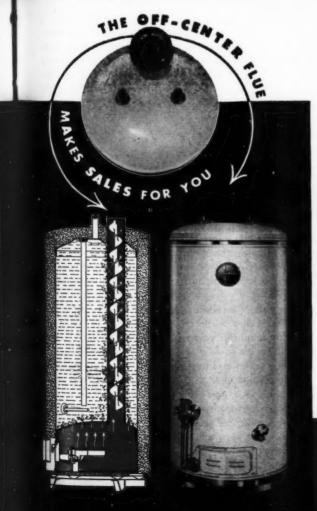


GLASSLINER



Finest glass-lined or galvanized water heater anywhere!

Automatic GAS water heaters TO OPERATE PROVE IT!



BEATS the rest



MRS. AMERICA 1955

JOHN WOOD
gives you MORE to build sales!

- . A PRICE FOR EVERY BUDGET!
- THE ONLY WATER HEATER OFFICIALLY ENDORSED by Mrs. America 1955!
- FULL PROMOTIONAL HELPS, including displays, stuffers, national advertising, etc.



Finest glass-lined or galvanized water heater anywhere!

JOHN WOOD COMPANY

HEATER AND TANK DIVISION
Conshohocken, Pennsylvania and Chicago, Illinois

WASHINGTON LETTER-

A Buyer's Market

(Continued from page 29)

ments was about the same as that spent for alterations and improvements during the five month period — \$1.-264 billion for repairs and \$1.410 billion for alterations. Although the total amounts were approximately the same, five out of eight homeowners spent the money for repairs whereas about three out of eight made alterations during the five months.

Ten percent of the total expenditure for the United States was spent on farm properties, although contract work accounted for less than one-third of the total expenditures for farm improvement, compared to about half for non-farm properties.

Older Houses are Likely Markets

The oldest properties — those with structures built before 1930 — had the most money spent on them. Otherwise, as far as total expenditures are concerned, there seems to be no distinct relationship to age of structure. There are some interesting relationships, however, between age of structure and the amount spent for repairs on the one hand and the amount spent for alterations and additions on the other. For repairs, properties with new structures — those built since 1950 — have the smallest average expenditure; but for all other properties, age did not seem to make much difference. For alterations and additions, the average amount spent was highest for the most recently built houses and was correspondingly lower for each age group back to 1930.

For houses built before 1930 the average was again high. It is in this older group of houses where obsolescence has reached the stage in which major rehabilitation and renovations are necessary. More money was spent in the first five months of 1954 on properties which had been purchased recently than on those purchased some years ago. The difference is significant between the properties purchased in the last four years and those purchased in 1939 or earlier — an average of \$181 for the former and \$140 for the latter. Substantial amounts were spent, on the average, on the oldest structures which were purchased recently. Often when an old home is purchased there are many features and conditions which require changes to suit the new purchaser's taste.

Steel mills hit their 1954 high in the week ended December 12 at 82.1 percent of capacity; this is equivalent to an annual rate of 102.1 million tons, approximately the output expected in 1955 by various forecasters.

Business in 1954 was the best of any peacetime year on record. The year brought more unemployment and short hours, and more business losses and failures. But the people of the country consumed more goods and services of every day use than ever before; and per capita consumption, according to estimates, was reduced by only one-half of one percent. Current savings, dollarwise, were only a little less than in 1953. At the same time, nearly as much was added to the fixed investment of the country—construction plus producers' equipment—as in 1953, and more than in any other year. These indexes are the measures of living standards and of the general welfare. Although their good showing may seem inconsistent with the fact that industrial output was lower, the drop in production was attributable almost entirely to reduced purchases for government use and for inventory.

Depression Averted

Even more important, 1954 was the year in which a depression might have happened but didn't. As the year opened the economy was in the midst of a shift from war to peace and from shortages to plenty. Cutbacks in security expenditures followed the end of fighting in Korea in 1953 and the demand for defense goods and services dropped at the rate of \$12 billion a year, or about one-fourth.

But despite the total drop to more than \$22 billion a year, the decline did not become cumulative. Apprehension of a downward spiral "which goes on and on of its own accord until the economy has fallen to an extremely low level" never materialized. What followed for the next six months was instead a period of overall stability in production, employment, income and prices — a period of consolidation for the recovery which is now underway.

A Test for U.S. Economy

The record of 1954 provides a demonstration of the ability of the economy to work out an orderly readjustment without large scale deficit spending. In the first ten months of 1954, wages and salaries totaled about \$3 billion less than in the corresponding months of 1953, but the rise in government payments for unemployment insurance, social security and veterans benefits offset nearly two-thirds of the drop. Agricultural price supports also helped sustain income. As a result, personal income before taxes in 1954 nearly equalled the 1953 total. Personal tax liabilities dropped, in part because of the decline in pre-tax income and partly because of reduction in federal tax rates. Income after taxes rose to new highs. Largely because of these influences, consumers' spending power rose to a new record in 1954. At bottom, confidence rests on faith that an increasing population and rapid technological progress promise long-run growth.

Finally, credit must also go to the more extensive information now available on business development and "YOU'LL REALLY THRIVE ... IN '55 ... WITH VICTOR"

New 2-Toned Beauty Same Famous Victor Quality!

Hunt the nation over . . . you'll not find a finer furnace to sell than Victor . . . for Quality . . . for Sales appeal . . . for Owner satisfaction . . . for PROFIT!

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It's the furnace with the Fuel-Saving FINS, famous since 1890. Every De Luxe Victor you sell is WAR-RANTED for 15 Years. The many exclusive features of genuine merit TAKE YOU OUT OF THE COMPETITIVE CLASS. The versatility of the many models, for both winter and summer air conditioning, assure you a VICTOR, tailored to the needs of every possible installation. The new, exclusive VICTOR franchise offers bigger dealer-distributor profits than ever before.





NEARLY 100 MODELS AND SIZES FOR

- · GAS ·
- · OIL ·
- · COAL ·

Sales Closing Aids...

The multitude of sales aids makes closing VICTOR sales easy. From the unique VICTOR table-top Fuel-Saving FIN demonstrator to the decals on your truck . . . from newspaper ads to sales easel and literature . . . you are equipped to cash-in in '55 with VICTOR. PHONE, WRITE OR WIRE FOR FRANCHISE FACTS TODAY!



HALL-NEAL FURNACE CO. 1322-42 N. CAPITOL AVE. INDIANAPOLIS 7, INDIANA

QUALITY FURNACE BUILDERS SINCE 1890

There's an Easier Way!...



No need to "work like a beaver" on cutting jobs. Now . . . zip through 3/16" aluminum, sheet metal, even 16-gauge steel, with minimum effort . . . maximum speed. No drilling, filling or deburring. No need for starting holes. Two-inch diameter blades give full 3/8" depth cut. Saws around curves and contours . . . follows cutting line with ease. Leaves smooth, accurate milled edge.

Ideal for cutting into existing duct work and for sawing metal laminates, such as Mirawal. Metlwal. Metlwal. Metlwal and Armorphy. Also cuts Fiberglas, plastics, plastic laminates, practically any sheet material. Amazingly easy to use . . . speeds on-the-lob fabrication . . . extra rugged for long, hard service.

Powered by heavy duty, industrial type 110 volt AC/DC portable 5/18" capacity electric drill motor. Ball bearing equipped drive for smoother operation.



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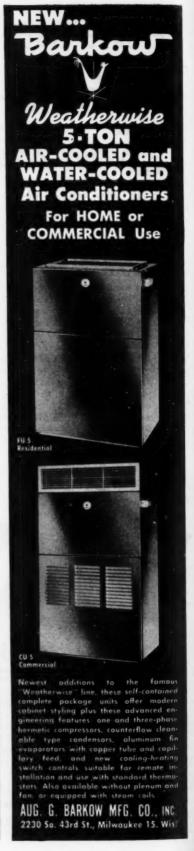
WASHINGTON LETTER -

to greater knowledge of how to put this information to work. An informed and enlightened management is less likely to make panicky decisions. At the beginning of the year many feared that markets for consumer durable goods and housing were saturated. Yet since the war vast numbers of homes, cars, appliances, and other durable goods have been built and sold. Consumers have satisfied their most pressing wants. Yet families showed in 1954 that they are ready and willing to buy the products they find attractive. There were no backlogs of unfilled demands left over from depression. war or materials shortages. Today it is generally the people who already have a house, a car or home appliances who are the heart of the market for a new version. The housing boom is kept going, to a considerable degree, by families who want larger, better, more modern homes in suburban areas, not - as was the case in early post-war years - newly formed families who wanted any sort of moderately priced shelter.

Sales Must Be Earned

The other side of the picture is that today's markets are buyers' markets. To an increasing extent, today's consumer can postpone satisfaction of his wants if nothing attractive is offered. Styling, quality and new features are more important than ever, and so is price. Ivan L. Wiles, general manager of Buick and vice president of General Motors. noted recently: "Sales success is something which must be deserved and earned - and not something which comes automatically to all members of an industry in equal degree. . . Sales success in a competitive market must start with two essential ingredients: the right product, and the right price. And the two must go together."

These stabilizing influences have made 1954 a notable year and one full of promise in the long effort to moderate business fluctuations.



controls Our need purpose

world's most complete line



Honeywell

controls

Leadership is an obligation

As the leader in the field of automatic controls, Honeywell is aware of a definite obligation to its customers above and beyond an assurance of quality products and extended service. It means that you are entitled to a program of research and engineering that will assure you of the newest developments in automatic control . . . that will provide you with new ways to make your business more profitable.



Honeywell

First in Controls

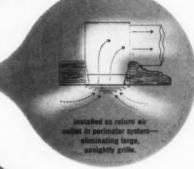


Finishing touch to today's ceiling

Lima series 60

square
design
ceiling
diffuser







accentuates the beautiful symmetry of modern ceilings

When the specs call for a ceiling diffuser, you'll make your customer happier—and your job easier—by installing the Lima square design ceiling diffuser. It harmonizes beautifully with today's acoustical tile or block ceilings, and modern rectangular rooms. Light beige Lima finish is permanent and requires no repainting.

assures complete comfort in heating and cooling The Lima-engineered square design and tiers of step-down vanes provide greater free area for more effective air diffusion in all directions at correct angles for complete indoor comfort—in heating and cooling. Ask your jobber's salesman or write direct for new complete Lima catalog.



Sold exclusively through heating wholesalers and manufacturers



SUNBEAM SMALL ECONOMY SIZE

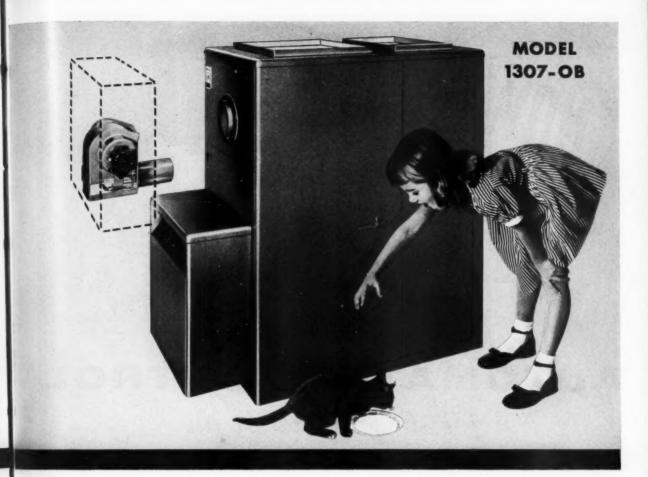
oil-fired winter air conditioner

78,000 BTU at Bonnet; 67,000 BTU Output at Register



Sketched at the left is a typical installation of Sunbeam Model 1307-OB, lined up alongside a basement wall and occupying a minimum of floor space. By locating the flue opening at the side of the unit, Sunbeam design engineers have made it far easier to install, wire and service the burner and controls.

installation and maintenance simplified by easy-access flue design



Backed by American-Standard Research and by Sunbeam—one of the most honored names in home heating equipment—the all-new Model 1307-OB meets the builder's need for a dependable, easily installed, low-priced winter air conditioning unit. Famous Arcoflame Burner, Detroit Controls and Sunbeam's soundly engineered over-all design add up to extra value that's easy to see and easy to sell. For complete details, contact your Sunbeam distributor.

Sunbeam Air Conditioner Division, Elyria, Ohio.

FURNACE IS FACTORY ASSEMBLED

- Economical size for small homes —67,000 Btu at register.
- Compact unit is 48" high, 25½" wide and 43½" deep.
- Detroit Controls are precision made noted for reliable performance.
- Jacket extension, as shown, is optional.
- New design Arcoflame Burner requires less space... is hanger mounted for ease of installation and quiet performance.
 Unit is factory operated to assure immediate start-up when installed.



SUNBEAM AIR CONDITIONER DIVISION

American Radiator & Standard Sanitary Corporation

Serving home and industry: American Standard . American blower . Chorco Seats & Wall tile . Detroit controls . Rewance dollers . Ross exchangers . Sundeam air conditioners

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AUTOMATIC CONTROL

for space heaters with

LIMITED CLEARANCE FLOAT VALVE LOCATION

with this new and smaller Detroit add-on control...

The new Detroit CRC-239-PE Add-on Package provides a simple means of converting any space heater equipped with a manual CRC-239 Float Valve to room thermostat control. While it is ideal for any installation, this package is particularly well adapted for jobs where space is limited. That's because the electric add-on control stands less than 2 inches high-can be easily installed even on heaters where the fuel tank is located close above the float valve. What's more, this add-on is so designed that it may be installed without removing the float valve from the heater and it is not even necessary to let the fire go out. See your Detroit wholesaler today.

COMPLETE PACKAGE INCLUDES

-No. 411 Room Thermostat with separable wall mounting bracket, Electrical Add-on, No. CA-240 Transformer, wire and staples.



CONTROLS Corporation



5900 TRUMBULL . DETROIT 8, MICHIGAN

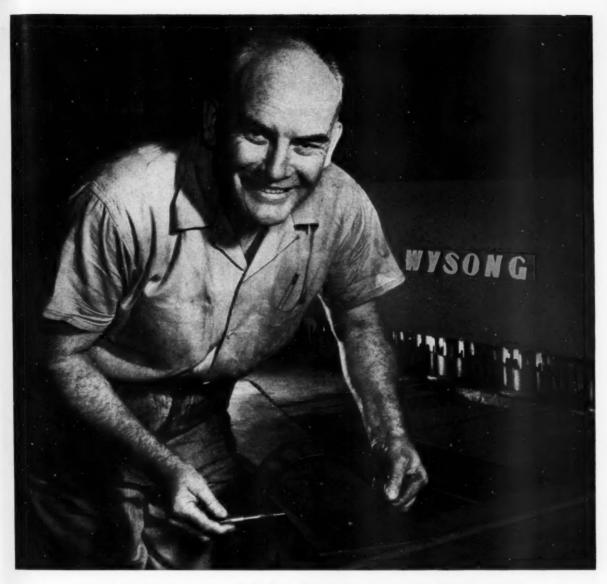
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

Representatives in Principal Cities . Canadian Representatives in Montreal, Toronto, Winnipeg-Railway and Engineering Specialties, Ltd.

AUTOMATIC CONTROLS for REFRIGERATION

AIR CONDITIONING . DOMESTIC HEATING . AVIATION . TRANSPORTATION . HOME APPLIANCES . INDUSTRIAL USES Sowing home and industry

AMERICAN STANDARD - AMERICAN BLOWER - CHURCH SEATS A WALL TILE - DETROIT CONTROLS - XEWANEE BOILERS - ROSS EXCHANGERS - SUNBEAM AIR CONDITIONERS



SHEAR SATISFACTION!

When you use a Wysong, you will know what I mean—a clean, accurate cut and complete confidence that the next cut will be just like it.

Wysong Shears are designed and built for that kind of shearing — rugged enough to withstand the shock of capacity shearing, rigid enough to maintain accurate alignment.

You will want to know about the rigid, hi-tensile castings; the drive unit which runs in oil; the non-repeat unit; the positive, compensating holddown; the ball-bearing precision back gauge; and other superior Wysong features. They add up to SHEAR SATIS-FACTION—for the boss and the operator, too.

Before you buy, investigate WYSONG ... it's MILES ahead! See your dealer or write factory for new catalog.

WYSONG AND MILES COMPANY . GREENSBORO, NORTH CAROLINA

Builders of Precision Machines For Over Fifty Years.

WYSONG

Did you sell him the "Long Profit" Job?



THIS MARK CAN MEAN MORE SHEET METAL PROFITS. It identifies Enduro Stainless Steel, the most versatile commercial metal. With your present equipment you can make stainless steel signs, restaurant equipment, dairy equipment, food processing and chemical equipment, to mention just a few items. And all of them give you a high profit and take you away from the lower profit jobs that sell on price.

Did you sell him Enduro Stainless Steel equipment? Or did you lose that extra margin because you sold him on price?

It's no harder to sell a job in stainless steel. And it means more money in your pocket. You have extra features to sell that make dollars and sense to your customers. Look at them.

- 1. Attractive appearance
- 2. Easy cleaning
- 3. Resistance to rust
- 4. Long service life
- High strength with reduced weight and bulk.

These are only a few. You can satisfy almost any customer when you sell equipment in

REPUBLIC
World's Widest Range of Standard







Stainless Steel. Republic Enduro Stainless If you're not making these extra profits, see

your Republic Distributor and get started. He can give you fabricating tips which will get you off on the right foot. And Republic will help you, too. Just fill out and mail the coupon today.

STEEL Steels and Steel Products IT'S EASY TO SELL AND HANG high-profit roof-drainage jobs, especially when you use stainless steel roof-drainage products made by Republic's Berger Division. Customers buy when you point out such features as rust and corrosion resistance, little or no maintenance, lower final cost. Installation is easy with your usual tools and experience. Just use a large soldering iron, slightly hotter than usual and wash off flux immediately and thoroughly with 5% to 10% solution of washing soda and water. Rinse well and dry with clean cloth. Use stainless steel accessories for complete satisfaction.

REPUBLIC STEEL CORPORATION	
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Cleveland 27, Ohio	STEEL
Please send more information on:	
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Steel.

Halstead & Mitchell

for LONG LIFE PROTECTION

COOLING TOWERS

with the exclusive

20 Year Guarantee!

on the wetted deck surface against rotting or fungus attack



YOU ARE GUARDED WHEN YOU CHOOSE A HALSTEAD & MITCHELL RESIDENTIAL OR COMMERCIAL TOWER

Only Halstead & Mitchell can offer a 20-Year Guarantee on the wetted deck surface against rotting or fungus attack because only Halstead & Mitchell creosotes cooling tower wood. No other material, subject to deteriorating or rusting, can be so guaranteed.

Stainless steel fans, sheet steel cabinets hydraulically painted with vinsynite, vinyl zinc and chlorinated rubber ... add to this protection for the longest life. There's no extra cost for these extra protections ... just extra long time benefits on the job.



CONDENSERS

with economical

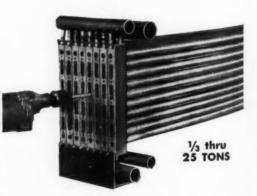
Lifetime Cleanability

for always-new efficiency

The cooling tower you select works with a condenser, and here again you are guarded by Halstead & Mitchell.

CLEANABILITY in a water-cooled condenser costs no more, but troubles from poor water conditions vanish. Heat transfer efficiency is maintained at new unit levels for life, for a simple mechanical cleaning tool restores heat transfer surfaces in minutes.

Regardless of whose condensing unit you buy, do what almost all leading manufacturers have done—specify CLEANABILITY. It's your most important protection ... why settle for less?



AT LEADING HEATING AND REFRIGERATION WHOLESALERS EVERYWHERE

Write for Detailed Specifications



BESSEMER BUILDING . PITTSBURGH 22, PA.

WITH RAID ATTOL

Why burners?

R

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- The public acceptance of gas heat was built on conversion burners—Janitrol* Conversion Burners in particular. They provided the home owner with all the advantages of gas heat, economically . . without discarding his present furnace or boiler.
- The records of many gas companies show that it frequently costs less to heat with a Janitrol burner, than with gas designed equipment.
- Conversion burners are a high profit line.

Why Janitrol?

- *Surface Combustion Corporation (makers of Janitrol) manufactured the first factory-assembled, completely automatic gas conversion burner. Many of them are still in operation after 25 to 30 years of service!
- The modern Janitrol Burners are low in cost; simple to install, since they require no "building" in the furnace or boiler; sell easily with a high profit.
- You can offer nationally advertised Janitrol quality at little or no difference in price over "bargain burners".
- For natural, manufactured or L.P. gases.

MODEL JD-DELUXE:

The handsome, totally-enclosed unit with all the plus features . . . Turbo-Flame diffuser, Electro-Fyre igniter, Uni-Thrift control, remote ignition panel, newest time-modulation thermostat.



MODEL JF-STANDARD:

Has all the basic Janitral design features, and yet competitively priced . . . with standard salenoid valve and controls . . . or with latest self-generating controls for operation independent of house current.



MODEL JH-GUN TYPE:

Especially adaptable for quick replacement of oil-fired pressure type burner equipment. Has adjustable blast tube, pilot lighter, thermostat and all safety controls.



MODEL SC-05-HIGH CAPACITY:

A compact, inshot type burner for larger installations requiring input capacities up to 750,000 Btu. With either safety pilot or electronic controls.



WEBSTER FORCED DRAFT BURNERS:

For conversion of high capacity boilers. Available in gas or dual-fuel types, custom-engineered for any installation. Capacities up to 50,000,000 Btu.







Surface Combustion Corporation, Columbus 16, Ohio In Canada: Alvar Simpson Ltd., Toronto 13

CONTRACTORS Write today for all the facts on Janitrol and the sales opportunities in your area.

Are Your Sheet Metal Screws HEADED FOR TROUBLE ...?



Screws are sometimes like people. If they "lose their heads" under pressure — if they turn out to be "softies" — if they don't "square up", they are headed for trouble. It takes only a few "bad" screws in each box to slow down the job and set up weak spots in the installation.

That is why quality standards were set so high when P-K developed the first Sheet Metal Screws over 37 years ago. Today, with even higher standards, they continue to take top honors for dependability, despite many efforts to match them.

P-K Sheet Metal Screws are "headed for savings" — not only headed, but threaded, pointed, and heat-treated with the same purpose — to save you time and trouble on the job.

You'll find the type, size, and head style you need in the complete P-K line... several standard types and sizes in stainless steel. Ask for samples. Parker-Kalon Division, General American Transportation Corp., 200 Varick St., New York 14.

PARKER-KALON®

The Original SELF-TAPPING SCREWS



IN STOCK . . . see your nearby P-K Distributor



WHAT THE ASSOCIATIONS ARE DOING

Committees Plan 40th Wisconsin Convention

"LIFE BEGINS AT 40," according to R. S. Schmieder, executive secretary of the Sheet Metal Contractors Association of Wisconsin, who is working on plans for the association's 40th annual convention scheduled March 7-9 at Hotel Schroeder, Milwaukee. Mr. Schmieder reports that members of the convention committees are enthusiastic about the way program plans are developing and feel the 40th convention will be one of the most interesting and important meetings in the group's history.

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Special attention is being given this year to balancing the program so all presentations will be accorded equal interest. For example, committee reports, which in the past were all presented during the course of one long meeting, will be broken up and presented at various sessions throughout the convention. This procedure, it is felt, will maintain interest and the important reports will receive the attention they deserve.

Events planned include a seminar on warm air heating, air conditioning and architectural sheet metal work and a session on industrial sheet metal work. including blow pipe and dust control, on which there will be a panel discussion with floor participation. Another panel discussion will be on commercial air conditioning and ventilation. Dee Cramer, president, Sheet Metal Contractors' National Association, and J. D. Wilder, executive secretary of the national association, have been invited to attend the Tuesday luncheon. Mr. Wilder will preview some of the activities planned for SMCNA's forthcoming convention in San Francisco and will present a color sound film entitled A World In a Week — California. The balance of Tuesday afternoon will be devoted to discussions of costs, overheads, pricing policies and the new tax law.

Entertainment is being planned for each evening and a special committee is working on a program for the ladies.

N. J. Reports on Oil Heat Courses

THE STATE EDUCATIONAL committee of the Oil Heat Council of New Jersey (a division of the Fuel Oil Distributors Association of New Jersey) reports that a total of 2600 dealers, contractors and service men have attended the oil heating classes sponsored by the council during 1954 in cooperation with various manufacturing concerns. Robert Crane is chairman of the committee and John M. Sibarium is director of education.

Awards in recognition of outstanding contributions to the educational program were recently presented to participating manufacturers. The gold award of superior service - granted to manufacturers or individuals who participated in a minimum of 25 schools within the calendar year and who received the unanimous recommendation of all county and state coordinators of the program for presentation, materials and educational value to the industry as a whole was presented to Bacharach Industrial Instrument Co., Boston Machine Works Co., General Electric Co., Minneapolis-Honeywell Regulator Co., Perfex Corp. and Webster Electric Co. Mr. Sibarium, who as director of education conducted 42 courses, was also granted a gold award. The silver certificate, awarded to those participating in at least 12 schools, was presented to Brundage Co., General Filters, Inc., Sundstrand Machine Tool Co., White Rodgers Electric Co. and Williams Oil-O-Matic Div. of Henney Motor Co., Inc.

St. Paul Group Holds Election

New Officers recently elected by the Roofing and Sheet Metal Contractors' Association of St. Paul are: president, David D. Diamond; vice president, Robert O. McPhillips; secretary, Willard Dahms; and treasurer, Harry F. Wahl. In addition to the officers, who also serve as directors, the following were elected to the board: John F. Gill, C. E. Parriott, C. P. Neil and Oswald Christen.

Talk Cooling, ASHAE Research

PRINCIPAL SPEAKERS at a recent meeting of the Illinois Chapter of the American Society of Heating and Air-Conditioning Engineers were Elmer R. Kaiser, ASHAE director of research, who described the work of the research committee, its objectives and some of the work now under way, and R. A. Gonzalez, director of application engineering, Airtemp Div., Chrysler Corp., who told about recent developments which have made air conditioning available at reduced costs in many parts of the country.

Mr. Kaiser outlined a number of projects now underway at the society's laboratory or at cooperating institutions. The projects include collecting and verifying coefficients of heat transfer for publishing in the Guide, experiments to obtain more reliable data on air infiltration and exfiltration, and studies relating to filters, combustion pulsations, piping noise, unit heater air distribution patterns, register and diffuser air patterns, pressure loss of duct fittings, dehumidification techniques, and human reaction to change in environmental conditions.

Mr. Gonzalez described the various methods used to

cool refrigeration systems and pointed out the advantages and disadvantages of each method. Using the water cooled unit as an example of efficient operation when water is both plentiful and low enough in temperature, he progressed the operation of the cooling system through various phases where water was scarce, high in temperature or nonexistent. He recommended the cooling tower and evaporative condenser for meeting the needs of a scarce water supply and an air cooled condenser for use where water could not be used.

In pointing out the need for air cooled condensing units, Mr. Gonzalez said the convenience of the homeowner made this method of cooling a residential air

Coming Events

Feb. 17-18—Knoxville Indoor Comfort Conference. W. A. Simpson, Chairman, 906 Sevier Ave., S.E., Knoxville, Tenn.

Feb. 21-22—St. Louis Indoor Comfort Conference. C. S. Franke, Chairman, 1300 Hampton Ave., St. Louis 10.

Feb. 24-25—Michigan Heating & Sheet Metal Association, annual convention. Bancroft Hotel, Saginaw. N. J. Biddle, Secretary, 3035 E. Grand Blvd., Detroit 2.

Feb. 28-Mar. 2—Ohio Sheet Metal Contractors' Association, annual convention. Sheraton-Gibson Hotel, Cincinnati. William C. Lumm, Secretary, 2512 Albion St., Toledo.

Mar. 3-4—Binghamton Indoor Comfort Conference. F. Meir, Chairman, 1 Lewis St., Binghamton, N. Y.

Mar. 7-8—Philadelphia Indoor Comfort Conference. J. E. Phillips, Chairman, 19th & Washington Ave., Philadelphia 46.

Mar. 7-9—Sheet Metal Contractors' Association of Wisconsin, annual convention. Hotel Schroeder, Milwaukee. Robert Schmieder, Secretary, 225 E. Michigan St., Milwaukee.

Mar. 9-12—Purdue University Short Course.
Professor M. M. McClure, Div. of Adult
Education, Purdue University, West Lafayette, Ind.

Mar. 10-11—Harrisburg Indoor Comfort Conference. L. N. Yost, Chairman, 4300 Paxton St., Harrisburg, Pa.

Mar. 14-15—Saginaw Indoor Comfort Conference. C. L. Schartow, Chairman, 200 Haley St. at Larkin, Midland, Mich.

Mar. 25-26—Sheet Metal, Air Conditioning & Roofing Contractors' Association of Pennsylvania, annual convention. Brodhead Hotel, Beaver Falls. Earl W. Liebermann, Secretary, 1411 Merchant St., Ambridge, Pa.

Mar. 28-31—Michigan State College Short Course. Professor R. J. Waalkes, Department of Mechanical Engineering, Michigan State College, East Lansing, Mich.

Mar. 30-31—Albuquerque Indoor Comfort Conference. J. H. Smith, Chairman, 612 N. First St., Albuquerque.

Apr. 4-5—Omaha Indoor Comfort Conference. L. C. Norton, Chairman, 1201 Dodge St., Omaha 8.

Apr. 7-8—Davenport Indoor Comfort Conference. E. Adolphi, Chairman, Federal & Charlotte Sts., Davenport, Ia.

Apr. 11-12—Madison Indoor Comfort Conference. C. W. Vaughn, Chairman, 1806 South Park St., Madison 5, Wis.

Apr. 14-15—Duluth Indoor Comfort Conference. J. P. Nelson, Chairman, 309-49 S. 5th Ave., W., Duluth, Minn.

Apr. 18-19—Fargo Indoor Comfort Conference. R. E. Hartke, Chairman, 92 Northern Pacific Ave., Fargo, N. D.

Apr. 18-21—Iowa State College Short Course. Professor Marvin Gould, Engineering Extension Service, Iowa State College, Station A, Ames, Ia.

Apr. 19-21—Oil-Heat Institute, annual convention, Conrad Hilton Hotel, Chicago. R.
 H. L. Becker, Managing Director, 500 5th
 Ave., New York 36.

Apr. 24-27—Sheet Metal Contractors Association of Illinois, Inc., annual convention,
 Pere Marquette Hotel, Peoria. Jay E.
 Harms, Secretary. 1619 N. Sheridan Rd.,
 Peoria.

Apr. 27-30—Sheet Metal Contractors' National Association, annual convention.

Mark Hopkins Hotel, San Francisco. J. D.

Wilder, Executive Secretary, 170 Division
St., Elgin, Ill.

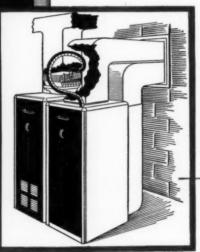
Apr. 28-29—Hartford Indoor Comfort Conference. C. W. Thomas, Chairman, 133 Laurel St., Hartford 6, Conn.

Now! from fluid heat...

An Add-On Air Conditioning Unit for any home heated by forced warm air!



- Central, conversion type, 3 H. P. (34,000 BTU/Hr. A.S.R.E.)
- Hermetically-sealed at the factory
- Extremely compact: 26" wide, 26½" deep, 51" high
- Operates in temperatures up to 125° F.
- · Air-cooled-requires no water
- Drip collectors of non-corrosive metal.



Unit is dehydrated at factory and charged with the exact amount of refrigerant required. Evaporator coil can be placed in the supply plenum of any forced air furnace, thanks to flexible refrigerant line exclusive with Fluid Aire. Saves time and money on installation because present plenum and duct work can be used.

MAIL FOR DETAILS

fluid aire

A product of the Fluid Heat Division, Anchor Post Products, Inc., manufacturers of a complete line of oil- and gas-fired heating equipment Anchor Post Products, Inc., Fluid Heat Div. 6720 Eastern Ave., Baltimore 24, Md.

Gentlemen: Please send me complete details on your new Air Conditioning Unit.

Firm Name

Address____

City_____Zone__State____

My Name

1955

conditioning system one of the most desirable. He reported his company found that along the southern coastal area some 85 percent of the 2 and 3 ton systems sold were using air cooled condensers and operating costs were no more than expected. Neither was the cooling capacity reduced to any objectionable point on maximum temperature days. In checking the capacity of air cooled systems, he found a 3 ton unit was delivering 2.9 tons at a 95 F outside air temperature.

200 Michigan Men Study Oil Heat

More than 200 heating men have graduated from the schools conducted by the Michigan Petroleum Association's Oil Heat Division. Schools were held in Bay City, Lansing, Grand Rapids and Detroit. Special certificates of appreciation have been voted for the following firms who participated in the teaching program: Boston Machine Works Co.; Breeze Co., Inc.; Brundage Co.; Connor Engineering Co.; Detroit Lubricator Co.; General Electric Co.; General Filters, Inc.; Leonard Refineries, Inc.; Minneapolis-Honeywell Regulator Co.; Skuttle Mfg. Co.; Webster Electric Co. and Winkler Div., U. S. Machine Co. An award was also presented to John M. Sibarium, technical adviser to the association's school program, who taught four special courses on combustion testing.

The school program was sponsored by the association in cooperation with various oil men's groups and local committees in the four cities. Joseph D. Hadley, executive secretary of the association, said objectives of the school program are twofold: 1) to teach new employees the basic principles of oil heating, and 2) to convey refresher information to oil heating dealers.

Cincinnati Group Elects Officers

THE CINCINNATI SHEET METAL Contractors' Association recently elected John Bareither to serve as president for the year 1955. Gene Butscha was elected vice president; Thomas Bremer, treasurer; and David Jacobson, secretary.

Milwaukee Approves New Constitution

AT THEIR RECENT annual meeting, members of the Milwaukee Sheet Metal Contractors' Association passed and approved a new constitution and bylaws. These are scheduled to be edited by the national association and by the group's attorneys and will then be put into book form.

Elected to the board of directors at the meeting were A. T. Ihde, Fred Heidenreich and R. Mamayek. The board then elected new officers as follows: president, A. T. Ihde; vice president, Robert Holming; secretary, Walter Marth; treasurer, Frank Kramer; and executive secretary, R. S. Schmieder.

Canadian Group Schedules Classes

THE CANADIAN CHAPTER of the National Warm Air Heating and Air Conditioning Association reports two Indoor Comfort schools have already been held this year — one at Vancouver and the other at Edmonton — and six additional conferences have been scheduled. Schools still to be held:

Feb. 28-Mar. 3—Catholic Culture Center, 435 Colbourne St., London

Mar. 14-17—Canadian Legion Memorial Bldg., 1191 Mountain St., Montreal

Mar. 21-24—Quebec Academie, Chauveau St., Quebec City (French language)

Mar. 28-31—Fort Cumberland Hotel, Amherst, Nova

Apr. 11-14—Canadian Legion Memorial Hall, 22 College St., Toronto

Apr. 25-28—Odd Fellows' Hall, 293 Kennedy St., Winnipeg

Kalamazoo Association Drafts Code

THE KALAMAZOO Sheet Metal, Roofing, Heating and Air Conditioning Contractors Association reports it has been working for the past 18 months on a heating, ventilating and air conditioning code for the Kalamazoo township and is now ready to present it for approval to the township. The city of Kalamazoo, according to the association, has had a code in operation for several years which has not been used by the township. Dealer Glen W. Rynbrand and Fred A. Madaus, Kalamazoo city heating inspector, have been in charge of drafting the heating code.

Principal speaker at the association's January meeting was E. O. Olson, chief engineer of Delavan Mfg. Co. Mr. Olson, who was assisted by Lee N. Beardsley, sales engineer for the Delavan company, spoke on the subject of *Nozzles*, the Key to Combustion.

Shortage of Sheet Metal Mechanics

Writing in a recent issue of *The Carolinas Roofer*, W. P. Budd, Jr. points out that the lack of experienced pattern sheet metal mechanics has become a critical problem. Mr. Budd, a member of the Carolina Roofing and Sheet Metal Contractors Association, notes that the rapidly expanding air conditioning and ventilating industries are creating a growing demand for such workers. He urges the development of a practical training program to supply the additional master mechanics who will be needed not only to meet the demands of expanding industry but to replace retired workers.

(More association news on page 52)

This is for sure

Talking about his profits, a heating man said this:

"I won't fool with unproven products. Service calls can eat you up. That's why I'm a Field man 100%. Why should I change? When you're talking the service calls saved and the fuel saved by Field you're talking dollars. And when dollars are at stake a few pennies more or less in the price of a draft control don't mean much."

FIELD CONTROL DIVISION

of H. D. CONKEY & COMPANY, Mendota, Illinois
Affiliates
Conco Building Products, Inc. • Brick, Tile, Stone Conco Materials Handling Division • Cranes, Hoists



You have

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BEHIND THE SCENES at every convention are many committee meetings. Some of them start early, such as this breakfast session which was attended by officers of the National Heating Wholesalers Association and members of the board of trustees

Heating Wholesalers Meet in Philadelphia

SUMMER COOLING Equipment and What it Means To The Wholesaler was the theme of the annual winter meeting of the National Heating Wholesalers Association held in Philadelphia, January 20 to 22. Problems of the distributing industry were discussed and recommendations were made by prominent members of the industry. In addition to the open sessions held during the three days, several business meetings were held at which association business was transacted and many of the problems created by the resignation of the full time executive secretary were ironed out. One such problem was solved by a resolution to alter the bylaws to make it possible to elect a president for a term of more than one year. It was felt that William H. Bowe, Jr., president for 1954, was familiar with the immediate problems involved in locating and training another executive secretary and the best qualified to perform this service in the shortest period. The new slate of officers for 1955 is: president, William H. Bowe, Jr.; president elect, Gail C. Mason; first vice president, Glenn A. Ashburn; treasurer, Robert H. Swart; secretary, A. G. Earnshaw. Other business conducted was the selection of dates and a location for the spring meeting, which will be held April 25 to 29 at Phoenix, Ariz.

Topics relating to the purchasing, stocking and merchandising of summer cooling equipment were discussed by a number of speakers, the first of whom was H. D. Bissell, director of merchandising, Minneapolis-Honeywell Regulator Co., who said, "The residential air conditioning industry is nearing the position where it may well become a boom for the

warm air heating wholesaler because the marketing channels all point to the warm air heating dealer. This is based upon a series of marketing studies recently completed for every region of the United States. The survey shows that distributors with confidence in their staffs can develop a training program for the dealer's salesmen, engineers and service men. Such a training program will result in dealer confidence in the performance of the products handled by the wholesaler and in turn give the dealer and his staff the background upon which they can build their own reputations as installers of good air conditioning systems." (A complete report of Mr. Bissell's paper will be presented in an early issue of American Artisan.)

J. F. Knoff, vice president, Airtemp Div., Chrysler Corp., spoke on What the Future Holds for the Air Conditioning Distributor. Mr. Knoff said, "The residential air conditioning market is being penetrated by the warm air heating dealer because there is no one else better equipped to approach the home owner. Thus the warm air heating dealer is the most important person in the distribution pattern. Cultivate this potential and watch the equipment roll out of the warehouse."

Other speakers included W. T. Goldsmith, Control Div., General Electric Co., who explained the importance of installing the number of controls necessary to obtain accurate and economical operation of air conditioning equipment, and John Robertson, Alliance, O. wholesaler, who discussed modern business machines.



VACATIONS LIKE THIS WERE OUT OF THE QUESTION TIL I BECAME A G-E HOME HEATING AND COOLING DEALER



Good things happen when you "sign up" with G.E.

This is no come-on! We'll tell you frankly that nobody is handing out blank checks simply because you "sign up" with G.E. There's no promise, no guarantee that your profits will jump.

But we will say this. Simply by putting that G-E monogram over your shop you're in a better position than ever to make bigger profits than ever-with no more effort than now (and probably a great deal less).

Why? Because virtually every family in your town has complete confidence in G.E. And you're the man who can turn that confidence into profits. You'll have a full line of home heating and cooling units, plus the famous G-E Air Wall system to offer your prospects-no matter what

the design, type, size or location of their homes. Each unit is backed by the famous G-E Warranty that gives you and your customers more protection than anything you've yet seen. And that includes 5 years protection on the sealed-in system of the cooling unit.

This advertisement is not designed to make you switch to G.E. overnight. All we'd like you to do is send the coupon below...so we can send you facts that will help you make a sound decision. No obligation, of course. However, when you read about the great G-E line and the new G-E "Charlie Boggs" Profit Plan-well, we feel you'll agree that the good things in life come a lot faster and easier when you put G.E. to work for you.

HOME HEATING & COOLING DEPT.

Progress Is Our Most Important Product

GENERAL (ELECTRIC

GENERAL ELECTRIC CO.—HOME HEATING & COOLING DEPT. AA-25 BLOOMFIELD, N. J.

Yes, I want the facts on why "signing up" with G. E. will step up my sales and progress.

TYPE OF BUSINESS...

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You Profit Four Ways When G-E Motors Are Installed on Heating Equipment You Sell



G-E MOTORS HELP YOU SELL. Prospects instantly recognize the G-E monogram as a symbol of reliability. Take advantage of this unmatched customer acceptance by pointing out that your equipment is powered by G.E. — leading manufacturer of motors for heating equipment. You'll find it helps close sales.



THEY KEEP CUSTOMERS SOLD. G-E engineers even run special under-water tests to prove that superior G-E insulation will provide maximum life in damp basements. Unique design which doubles lubrication life is one more G-E feature which contributes to dependability and customer satisfaction.



THEY INSTALL EASIER, FASTER. G-E motors are smaller and up-to-50% lighter than other motors — for easier installation in limited space. Rotation of burner and fan motors can be reversed by changing two easy-to-reach leads. Welded-on speed nut simplifies conduit connection. You save on installation.



THEY'RE BACKED BY LOCAL SERVICE. To provide prompt, efficient service for your customers, every major area has a G-E Small Motor Service Station. In all, these are four profitable reasons for suggesting that your suppliers power their products with G-E motors. General Electric Co., Schenectady, N.Y.

702-1

Progress Is Our Most Important Product

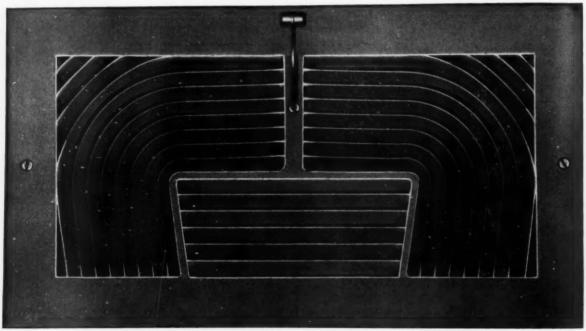
GENERAL (ELECTRIC



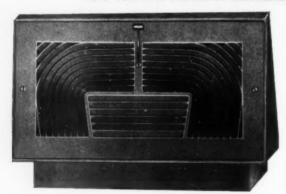
The Great New Line

DIFFUZAIR

for SIDEWALL INSTALLATION



No. 105 U.S. Perimeter DIFFUZAIR—the Greatest for Sidewall Diffusion



No. 106 U.S. BASE DIFFUZAIR—The greatest of all for OUT-OF-WALL BASE DIFFUSION.

GREATEST AIR SPREAD! LEAST RESISTANCE!

That Very Pleasing Attractive Design—That REALLY SMILES—For Heating and Cooling. Resistance reduced to a minimum. No air noise whatsoever at practical velocities.

Wider sproad—MORE THAN 180°—insures perfect performance. No weak spots in air distribution. No wall scrubbing. IT'S JUST PERFECT.



NEW 1955 CATALOG WILL SOON BE READY—SEND FOR YOURS TODAY

UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN

MINNEAPOLIS . KANSAS CITY . ALBANY

Can not be measured in DOLLARS and CENTS

YOU CAN'T BUY BETTER WARM AIR HEATING AT ANY PRICE!



We go along with the contention of many building authorities that, "Quality Heating costs less even if you have to pay more."

But why pay a premium?

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1955

Kaustine fully automatic oil fired heating equipment is the finest money can buy. With Kaustine you can offer exacting home buyers a heating plant second to none in economy, efficiency and long life. And, you can do this at a cost that is competitive.

Kaustine Engineering and Factory Assembly enable you to cut construction and installation costs. Kaustine design saves valuable floor space.



THE POPULAR JERSEY "75"

This oil fired fully automatic HIGH BOY Jersey "75" requires only 3½ square feet of floor space and delivers 75,000 B. T. U.'s.

Other models from 65,000 to 250,000 B. T. U.'s.

GET ALL THE FACTS ... WRITE DEPT. A-2



Causline TOPS IN QUALITY

There is a Kaustine Furnace or Winter

Air Conditioner for every type of home

AMERICAN ARTISAN, FEBRUARY 1955

You who Manufacture

Air Conditioning Units, Cooling Towers, etc.







COMPLETE FANS—in 11 sizes, capacities from 200 to 10,000 cfm. Built

Why are so many making Clarage their source of supply for wheels, housings, and complete fans? Largely because Clarage Type DF fan equipment is in a class by itself—rated superior in every respect. Built far heavier than ordinary furnace blowers, Clarage equipment provides full rated performance and trouble-free operation under the most exacting requirements. Don't "short change" the products you manufacture by incorporating anything less than Clarage quality. An investigation will prove that Type DF fan equipment is worth thousands of dollars to your sales department. For the facts, call our nearest sales engineering office or request Bulletin 603-B.

You who Install

Air Handling Equipment

Clarage specializes—builds fans and allied equipment exclusively. This concentrated "know how" assures you of complete satisfaction. You can have faith that your job is figured right for the required performance, built right for operation year after year with an absolute minimum of attention. There's a Clarage product for virtually every air handling problem you encounter . . . fans for air conditioning and ventilation . . . exhausters and blowers for industrial services . . . unit heaters...air washers and sprayed coil equipment. The Have us provide full information. Call our nearest sales engineering office or re-

CLARAGE FAN COMPANY, Kalamazoo, Mich.

quest descriptive literature.

READY UNITS for sme air handling requirements.

Direct connected and V-belt drive models.







You can Rely on FARAGE ... dependable equipment for

making air your servant

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES • IN CANADA: Canada Fans, Ltd., 4285 Richelieu St., Montred

EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available, see this month's New Literature department.

Combination Fan-Limit Control

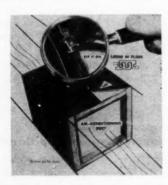
Model 480 combination fan-limit control designed for gas, coal, or oil fired systems — Perfex Corp., 500 W. Oklahoma Ave., Milwaukee 7. Single-throw limit switch prevents damage to installation due to excessive temperatures; limit lever system checks



every fan cycle. Fan switch and limit switch have fixed differentials and are actuated by a single thermal element. Features include solid liquid fill, single stainless steel diaphragm actuator for both fan and limit, enclosed switches and summer settings for continuous fan operation. Safety mechanism is said to eliminate danger from control failure by operating the limit switch permanently.

Insulated Duct Finish

"PROTEKTINSUL" duct covering finish designed to protect insulation against weather, abrasion, chemicals, mildew and other conditions — Miracle Adhesives



Corp., 214 E. 53rd St., New York 22. Furnished to size, the finish zips on and locks in place quickly. Said to provide an airtight, watertight finish, the material

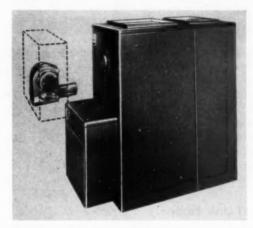
is available in any color desired. No painting, finishing or further maintenance is required, the company reports.

Air Freshener

FAN OPERATED air freshener designed to neutralize unwanted odors — Williams Chemical Co., 487 Broadway, New York 13. According to the manufacturer, the unit will deodorize areas up to 7500 cu ft. Unit replaces objectionable odors with fragrances of spice, pine, floral bouquets or cedar. Air freshener operates from any a-c outlet.

Oil Fired Furnace

Model 1307-OB oil fired winter air conditioning unit with ratings of 78,000 Btu at bonnet and 67,000 Btu at register — Sunbeam Air Conditioner Div., Ameri-



can Radiator & Standard Sanitary Corp., Elyria, O. Featured are side flue opening and hanger type burner mounting. Unit is slightly under 4 ft high, approximately 25 in. wide and 43 in. deep. Jacket extension to conceal the burner is optional.

Air Conditioner for Floor Installation

CENTRAL COOLING units designed for installation under hall floor with grille openings into rooms—General Air Conditioning Corp., 4542 E. Dunham St., Los Angeles 23. Available in 2 and 3 hp models said to cool 1500 and 2000 sq ft respectively, the units require standard 220 v, 30 or 42 amp electrical connections. Warm room air is drawn down through floor-level grille, cooled, dehumidified and filtered, and circulated by blower under top grille. Heat and moisture are ex-

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pelled by exhaust blower. Grille is equipped with regulating dampers and is also available with opening at back and front for 2 way circulation. Units are controlled by a thermostat.

Central Air Conditioner

"SUMMER WEATHERMAKER" central air conditioner package in a three ton capacity with physical dimensions slightly larger than standard room air conditioners — Carrier Corp., 300 S. Geddes St., Syracuse 1, N.Y. Unit is designed to cool, dehumidify and



circulate filtered air through the entire home; refrigeration is supplied from an air cooled refrigerating unit outside the dwelling. Inside portion contains cooling and dehumidifying coils, centrifugal fan and filter. The unit is also designed for apartment installation where space is often a problem. Dropped ceiling in a hallway serves as the distributing system and unit can be hung at the top of a hallway closet. Refrigerating unit can be installed on the roof, in the yard or on setbacks on taller buildings.

Fuel Unit Tester

PORTABLE FUEL UNIT tester which permits repair of pumps, valves and fuel units in the shop or the field — Kingsley Mfg. Co., 420 Howard Ave., New Haven, Conn. The manufacturer claims the unit makes accurate tests of all makes of oil burner pumps. Unit has an adjustable pump flange, reversible 1/3 hp motor, flexible test lines, quick coupling and adaptor connections.

Strip Supply Grille

"Vane-O-Line" double bank strip supply grille designed to deflect air in any of 4 directions — Louvra Corp., 1010 Jeanette Ave., Union, N.J. Grille is in 18 gage steel with 13 gage single horizontal front bar and vertical rear bars, all adustable to deflect air. Pieces are 13/4 in. deep with 5/8 in. face flange;

grille is available in 12, 18 and 24 in. sections. Finish is prime gray; special finishes are available on request.

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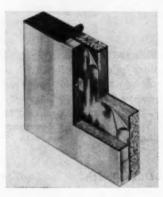
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Gas and Oil Fired Furnaces

GAS FIRED warm air furnace with 150,000 Btu input and oil fired unit with 130,000 Btu output — Coleman Co., Inc., St. Francis and Second St., Wichita 1, Kans. Both are available in vertical or console models. Featured in both are seam welded airfoil-design heat exchanger and foil-faced glass fiber insulation. Oil burning units have non-pulsating pressure burner with continuous automatic ignition. Stainless steel fire box, closed breeching, direct drive blower and automatic controls are other features. Gas fired models have monoport cast iron burner designed to burn all gases. For use in year-round air conditioning systems, units will be equipped with a special blower, combination heating and cooling thermostat and relay box.

Curtain Wall Panel

MODEL U-16 porcelain enameled curtain wall panel ranging in size from 2 to 32 sq ft — Erie Enameling Co., 1400 W. 20th St., Erie, Pa. According to the company, the double faced panel provides an acid-



resisting porcelain enameled exterior face, rigidity and flatness resulting from a light weight concrete fill, permanent vapor barrier, fiber glass insulation and inexpensive galvanized or plain steel interior face. Offering a U factor of 0.16 in its standard 2 in thickness, the panel consists of an exterior pan formed from enameling iron, aluminum foil laminate vapor barrier and 1 in. fiber glass insulation. The backing pan is of galvanized steel, porcelain enameled sheet or any plain metal. Perimeter is sealed with special tape.

Cooling Tower-Evaporative Condenser

NEW UNIT which can be arranged as a cooling tower or evaporative condenser by utilizing either the all copper inner fin coil or the copper decking — Bush Mfg. Co., 179 South St., West Hartford 10, Conn.

(Continued on page 132)

fer try to sell new home buyers on the space-saving advantages of the Horman Southerner?

An extra closet . . . more space in the basement . . . larger rooms on the first floor...a new freedom of design for more comfortable living and lower building costs, besides.

Sounds terrific! But how do you SHOW her that his compact horizontal gas furnace provides more room for living in her new home? One demonstration of the Norman Sketchbook does the trick! A wonderful new sales presentation with actual sketches of different homes and floor plans that show where the Norman Southerner is installed. It's right there ... as though the builder or architect sketched it for you.

You'll want to be one of the first to get your copy of the Norman Sketchbook. It's available in a handy promotion folder with all the material you need in sell the Norman Southerner to your builders and new home prospects. Write for your copy today!



PRODUCTS COMPANY



1150 Chesapeake Avenue dumbus 12, Ohio

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1955

cturers of a Complete line of Gas ng and Air Conditioning Equipment.

sales

for Norman heating dealers

New local advertising package

Another big promo-tion for Norman heating dealers. A complete package of advertising and sales promotion material . including local



The Norman Southerner HORIZONTAL FORCED-AIR







"I've found that when Penn limit controls are used on any heating system, my service costs go 'way down — and stay there! They're not only simple to install and adjust but are dependable and accurate. They always deliver the heating comfort my customers have a right to expect."

Yes, you'll hear many a heating dealer talk like this. And, these limit controls will handle line voltage, low voltage and millivolt circuits at no extra cost! But why not find out for yourself how Penn Controls can give you better satisfied customers, more sales, more profitable jobs? Ask your burner manufacturer or wholesaler for Penn heating controls — they cost no more! Penn Controls, Inc., Goshen, Indiana.

Type 442 Safety Limit or Operating Type Immersion Control for hot water jobs features close differential, trigger-quick response.

Type 520 Combination Fan

and Limit Control, with

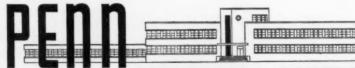
new mounting bracket, makes installation simpler

and easier in cramped

quarters or dim light.

Available in single units, for Fan only, or Limit only.

Penn Limit Controls Handle Line Voltage, Low Voltage or Millivolt Circuits.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

MONCRIEF...

"Takes-the-Slack" out of OLD-TIME FURNACE BUSINESS

NOW! It's Business <u>Everyday</u> for Moncrief Dealers

Heating and Air Conditioning Units for ANY Size or Type of Installation ... Oil or Gas



.

Winter Air Conditioning Units

Counterflow





Utility

Gravity





Unit Heate

Incinerators with or without Gas Burner.

Furnaces Gas Fired . Oil Fired



Moncrief dealers can have business rolling their way, day after day; every season of the year. Old fashioned ups and downs are eliminated with Moncrief's more competitive and versatile line of air conditioning equipment for Fall and Winter heating and Spring and Summer cooling.

Now, new Year 'Round units that will strengthen, even further, Moncrief's claim to the most complete line for meeting the most exacting customer and market demands, are soon to be announced.

- Counterflow models of Year 'Round Air Conditioners in the two most-indemand sizes — 2 ton Cooling with 100,000 B.T.U. Heating and 3 ton Cooling with 140,000 B.T.U. Heating
- Matched, 5 Ton Year 'Round Air Conditioners with a selection of (1): 140,000, (2) 175,000 or, (3) 220,000 B.T.U. Heating.
- New Air Cooled Refrigerating Circuits with Compressor located some distance from Cooling Coil, For use in Year 'Round Combination Units and as Add-On Units.

Moncrief Gives You Complete Versatility in Combination, Year 'Round Units . . . plus, Add-on Summer Cooling Units for Use with Present Warm Air Systems



Complete Year 'Round Unit. Heats in Winter Cools in Summer. Equipped with Oil Burner.



Installs Now for Heating Only. Add Cooling Circuit ANYTIME







NOW!] YOUR OPPORTUNITY TO CASH-IN WITH MONCRIEF IS UNLIMITED. See your Moncrief jobber TODAY! He carries a complete line of EVERYTHING you'll need to keep up with the demand for Moncrief Equipment.

THE HENRY FURNACE COMPANY .

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS



TURNACE PIPE AND FITTINGS

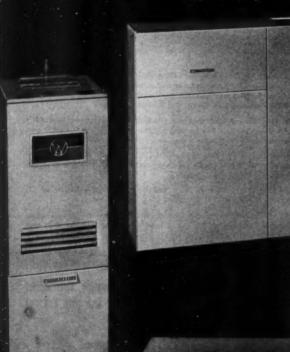
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1955

Your Westinghouse Distributor h

Westinghouse 10 and 15-ton Commercial Air Conditioners

Westinghouse All-Electric Heat Pump



Westinghouse 2-ton Year-Round Air Conditioner



Westinghouse 2, 3, 5-ton Air-Cooled Condensers

Mr. Al Beitzell of Combustioneer Corporation, in Washington, D. C., has been a Westinghouse distributor 22 years. He says, "I find the complete Westinghouse line helps my dealers to bid for any job—and fit the unit to the application . . . instead of the application to the unit."

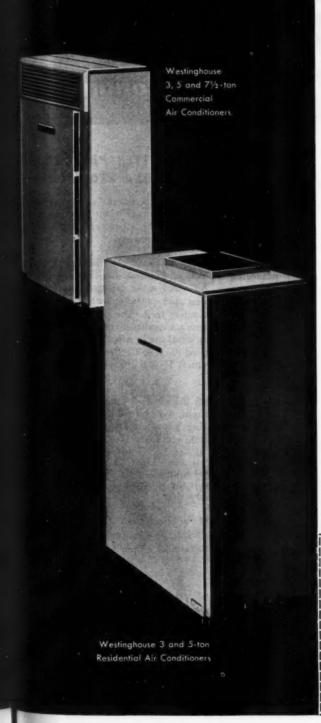


Westinghouse 2-ton Residential and Commercial Air Conditioner



Westinghouse PRECIPITRON

helps you increase profits with



A COMPLETE LINE TO GIVE YOU THE EDGE OVER COMPETITION

Why not get the better profits you ought to have in '55? It just makes good sense to tie up with the Distributor who offers you the quality products with customer ac-

The Westinghouse Air Conditioning Distributor offers you a complete line of self-contained Residential and Commercial Air Conditioners . . . year-round Heating and Cooling Units . . . the all-electric Heat Pump . . . and the exclusive Electronic Air Cleaner-PRECIPITRON. Any one of these units will mean added profits-by giving you an additional sales wedge. To get this line with the brand name that's a household word, call your Westinghouse distributor.

In addition to the Complete Line, ask him to give you the details on the following:

Complete Sales Promotion Package. Newspaper ad mats and Direct Mail to get leads and build show-room traffic . . . radio and TV scripts, displays, identification signs, banners, and handout literature.

Complete Sales Training. At the factory and in your region you can attend lectures and demonstrations on the product, on installation and on selling techniques.

Complete Financing—complete customer timepayment plan. Facilities tailored to your particular needs. This is the year to make the move. Aim for leadership with your Westinghouse Distributor. He offers you the only complete air conditioning line for every market.

YOU CAN BE SURE ... IF IT'S

Vestinghouse

MAIL THIS TODAY

Westinghouse Air Conditioning Dept. A-1 Box 510, Staunton, Virginia

I want the complete story on the 1955 Westinghouse Air Conditioning Line . . . and Sales Promotion Package-"Invitation to Leadership."

☐ I am now an air conditioning dealer

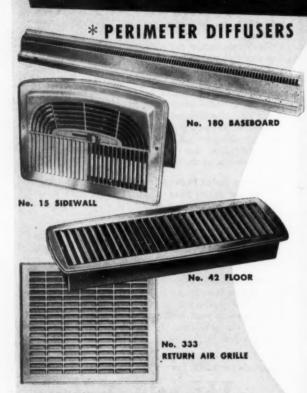
☐ I am not yet in the A/C Business I now handle the following lines:....

CITY.....STATE.....

Y 1955

Air Control *DIFFUSERS

Lead the Field in Efficiency!
Decorator Styling! Ease of Installation!



* CEILING DIFFUSERS

FLUSH OF STEPDOWN TYPE

BUTTERFLY DAMPER

BETTER-LOOKING, BETTER-PERFORMING DIFFUSERS FOR ALL YOUR REQUIREMENTS

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Install Air Control — get the benefit of the constant development program that keeps Air Control products out in front! Performance is right, customer satisfaction is complete, your profits keep growing.

AIR CONTROL PERIMETER DIFFUSERS — the complete line that pioneered the way and still leads. Take the No. 42 Floor Diffuser — no other make offers all its features, including curved adjustable vanes, streamline valve, and beautifully styled seamless face. The sensational No. 15 Sidewall Diffuser offers unequalled coverage plus the styling that fits it for universal use in this type of application. And the superbly styled No. 180 Baseboard model with its easy installation features is still the most copied in the industry.

AIR CONTROL CEILING DIFFUSERS — easily the most popular of them all! It took Air Control engineering ingenuity and manufacturing know-how to combine efficiency with economy in a ceiling diffuser. For heating or cooling—there's nothing like it.

Good quality is good business. Depend on the complete diffuser line that leads the entire field — ask your jobber for Air Control every time!

WRITE For Information On The Complete Air Control Line of Registers, Grilles, Diffusers, and Ventilators or see your nearest jobber.

Air Control

PRODUCTS, INC.

Mitchell expands line of Air Conditioners...Offers Air and Water Cooled Self-Contained units from 2 to 71/2 tons

CHICAGO, ILL. — Today, 19 new Self-Contained package Air Conditioners were announced by B. A. Mitchell, president, Mitchell Mfg. Co.

Heralded as a milestone in modern air conditioning engineering, the new Mitchell line includes Store Coolers in 2, 3, 5, and 7½ ton capacities both air and water cooled. Residential Add-On units in 2, 3, and 5 ton capacities, air and water cooled. Year Round Residential Air Conditioners in 1½, 2, and 3 ton capacities air and water cooled with gas fired furnaces from 75,000 to 150,000 btu.

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B. A. Mitchell pointed out that the new Mitchell Air Conditioning line was designed to meet the needs of the contractor, the service man and consumer, with such outstanding advantages as a Performance Guaranteed hermetic cooling system, new Slide-A-Way chassis and the amazing Electromagic Filter Eye.

"You expect more from Mitchell and you get all these amazing original air conditioning advantages. Mitchell discarded old fashioned air conditioning ideas and designs to give you more to sell."

"From the very introduction of room air conditioning, we have played a leading part in developing significant advances in this industry. Mitchell self-contained package air conditioners are being built with the best economies of modern mass production, giving the American public maximum quality and value in air conditioning," said Mitchell.



Mitchell has exclusive selling advantages

CHICAGO, ILLINOIS—An exclusive filter gauge, called the Electromagic Filter Eye, was announced today as standard equipment on all store units. This revolutionary air conditioning advance operates a positive signal light which tells the user when it is time to change filters.

As a deposit of dirt builds up in ordinary air conditioners, filters become clogged, capacity drops off, power and water costs increase—while cooling power decreases.

Recognizing this problem, Mitchell engineers developed the Electromagic Filter Eye that constantly measures an air conditioner's filtering efficiency and signals the user automatically when it is time to change filters for most efficient, most economical operation.

New Slide-a-Way Hermetic Cooling System

R. H. Lodge, Mitchell Sales Manager, demonstrates Slide-A-Way Chassis in 3 H.P. Residential Air Conditioner.

"This Slide-A-Way Chassis means that it will cost less to install and service a Mitchell," said Lodge at the premier showing of this new Residential line. He pointed out that it was not necessary to remove electric controls, damper linkage, baffles or sheet metal parts to slide out the chassis for service or inspection.

Performance guaranteed to provide comfort cooling in the space to be air conditioned, Mitchell self-contained units are hermetic systems, high in capacity and very quiet. Incorporating the latest welded hermetic design, the Mitchell refrigerant system is sealed



like a radio vacuum tube with nothing to adjust or oil. There is no need for seasonal pumpdowns, no belts to wear out or adjust, and Mitchell is always ready to operate. The heavy duty Mitchell compressor is super quiet and provides dependable service. There are no manhole openings or gaskets to cause leaks.

Mitchell merchandising program ready

A complete and detailed sales program is yours to build qualified prospects and close sales. Write today on your business letterhead for complete details on the Mitchell Packaged Air Conditioning Franchise.

MITCHELL MANUFACTURING CO.
Dept. A-1, 2525 N. Clybourn Ave., Chicage, III.



Many of today's alert businessmen are joining the ever-growing family of Waterbury dealers and distributors. Waterbury dealers enjoy, and profit from, reputations that only quality heating equipment, expertly installed, can successfully build and maintain. Equally as important, Waterbury maintains a sound dealer-distributor-factory policy, a policy which assures a profitable future for every Waterbury dealer.



If you're not already acquainted with the complete Waterbury line, now is the time to find out about Waterbury's place in your future. Association with Waterbury is good business.

The Waterman-Waterbury Co.

OVER 48 YEARS OF WARM AIR HEATING

1122 JACKSON ST. N. E. MINNEAPOLIS 13, MINNESOTA



aterburu

"It's what's under that the casing tounts!"



COMPRESSORS for year-around air conditioning

As a furnace manufacturer, you can now take advantage of a new freedom of design never thought possibe in year-around air conditioning. TECUMSEH'S new line of hermetic compressors offers you top efficiency under the toughest conditions. At 120° ambient and normal ACRMA conditions they will operate properly at 90% of rated voltage (207 v). By changing only electrical components, you can use the basic compressor for either water or air cooled applications. Single or 3 phase is available, giving you complete flexibility. Other advantages include size and weight making this line particularly attractive. See them soon, and discover for yourself that Tecumseh has the best job for your application at a price you cannot afford to overlook.



THE INSIDE STORY

Bulletin 100 contains detailed information and specifications. Send for your copy today.



RY 1955

TECUMSEH PRODUCTS

TECUMSEH, MICH.

EXPORT DEPT.: P.O. Box 2280, 24530 Michigan Ave. . W. Dearborn, Mich.

LEADERSHIP WITH FORESIGHT

The World's Largest reducer of Compresse

AMERICAN ARTISAN, FEBRUARY 1955

3 places a customer feels the difference with Regulaire*



Around the feet

Playing "footsie" with cold, drafty floors isn't a smart customer's idea of comfort. Floors can't get cold in a home equipped with Perfection's Regulaire.



Around his head

Regulaire automatically insures continuous warm air circulation that provides uniform temperatures from floor to ceiling—no hot heads or cold feet.

For you, too, Regulaire offers extra benefits in selling and servicing. It's so simple and service-free that call-backs are virtually eliminated. Sales are easier to close because Regulaire—exclusive with Perfection—is the one big difference in furnaces today. Nationally advertised, too. So this year—why not increase your share with Regulaire? Perfection Stove Co., 7616-B Platt Ave., Cleveland 4, Ohio.



In his pocketbook

Regulaire gives comfort at lower thermostat settings. Ends overheating and "cold 70's." Your customer saves fuel and money.

*Pat. Pending

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car



Chase Copper Roofing Products joined with standard soldering techniques stay joined for good!

Chase Copper Roofing Products not only stay watertight for good-they also resist the ravages of weather, withstand the weight of snow and ice-far better than any substitute.

Chase copper downspouts, gutters, elbows and shoes are made of 16 ounce copper or heavier for extra strength, longer life. All corrugations are deep and generous, so you can be sure Chase Copper Roofing Products will hold up under extreme temperature changes.

And remember this: Chase Copper Roofing Products blend harmoniously with any home design, modern or traditional. The free Chase Copper Roofing Products Booklet tells you more about Chase products, and how they will assure you of a quality job that will last for years. Write for your copy today.



adds extra value

to any home!

F KENNECOTT COPPER CORPORATION The Nation's Headquarters for Brass & Copper

y 1955



THE MOST IMPORTANT DOOR AT SEQUOIA

PROGRESS IN PRODUCTS a door never closed for long ... and one more reason why increasing numbers of heating dealers frankly prefer doing business with Sequoia. Typical are its new-for-1955 developments: (1) a series of air conditioners that stress the widest possible flexibility of installation; (2) new 75 and 105,000 btu furnaces in the narrow upright design style most often required by today's large residential developers.

These are tangible proofs of designthrough-production progress at Sequoia. So, previously, was its widely-accepted Closeteer with its extremely shallow-depth...its pioneering of the now standard-design Horizontal . . . and its performance edge in perimeter systems with Rev-flo.

It is timely for each heating dealer to ponder this basic question: How long since your manufacturers last unlocked the door leading to progress in products? And timely too, to request full information on Sequoia's ever-broadening line from the sales office nearest you.

Forced Air Gas Furnaces AND Air Conditioning Equipment

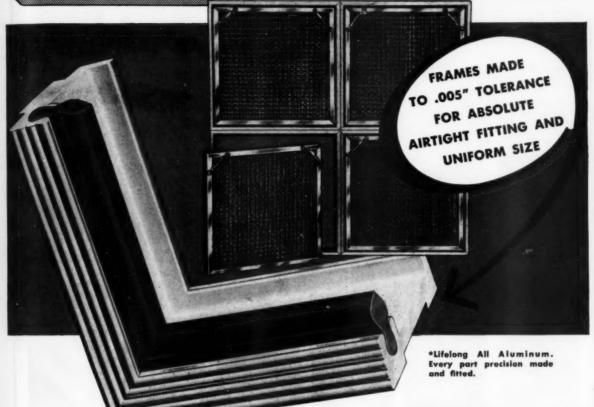
RICHMOND, VA., Jack Muther, 1504 Belleville Street NEW ORLEANS, C. Rollins Brown, 4508 Dreux Avenue ST. LOUIS, J. R. Layton, 5672 DeGiverville Avenue KANSAS CITY, MO., H. V. Patterson, 4112 Pennsylvania OKLAHOMA CITY, Guy W. Gentry, P. O. Box 7131 PASADENA, CALIF., John S. Padrick, 555 E. Walnut St.

SALES DEPARTMENT

SEQUOIA MANUFACTURING CO.

1000 BRITTAN AVENUE . SAN CARLOS, CALIFORNIA

Excuss Filters & Frames



EXTRA RIGIDITY HOLDS TRUE DIMENSION AND ALIGNMENT UNDER HEAVIEST STRESS

Made of high strength aluminum alloy. Extruded for superior strength, and highest dimensional accuracy. Filter and frame unit is light. Can be carried anywhere. Easily handled. Weight (including filter, frame, handles, gasket) 16 lbs. 4 oz.

MOLDED NEOPRENE GASKET STOPS AIR AND DUST BY-PASS

Precision manufactured interlocking construction prevents air leakage. Provides proper cushioning for positive sealing. Allows easy removal of filter without releasing dust to air stream.

AS SIMPLE TO PUT TOGETHER AS AN ERECTOR SET

No complicated parts. No complicated instructions. Cuts assembly time to one-half that of conventional type frames.

EVANS MERCHANDISING POLICY GUARANTEES TERRITORY PROTECTION

Adds profits, sales, gives new greater customer satisfac-

Investigate Now! MAIL THIS COUPON TODAY!

The George Evans Corp. GENTLEMEN: Please send me: Descr	
☐ Merchandising Policy ☐ Pr	
I WANT TO LEARN HOW TO MAKE MORE FILTER BUSINESS.	MONEY OUT OF THE
Name Company	
Address	
City \$1	ate

1955

Schaefer BRUSHES

For Plumbers . . . Furnace Men . . . Heating Contractors

Performance tested, SCHAEFER Brushes offer longer wear, better service, greater value—with the correct greater value-with brush for every industrial and domestic use.

SCHAEFER Flue and Boiler Brushes of SILVER BRITE Rustproof Wire

"Silver SCHAEFER'S special alloy rustproof spring steel wire has Brite" been developed for longer wear, more effective cleaning. It offers extra value, extra satisfaction in any brush.



Rectangular Flue Brushes No. 8-415—2"x4"x4½" No. 8-416—3"x5"x4½"





No. 8-390—156"x4"x4½" No. 8-391—2½"x6"x4½" No. 8-392—3½"x66%"x 4½"



Boiler Brushes No. 8-399—2"x4"x6" No. 8-400—2½"x4½"x6" No. 8-401—3"x5"x6"



Single and Double Spiral Flue Brushes No. 8-432—Single Spir Spiral Flue Brushes

No. S-432—Single Spiral
—1" to 4" dia.

No. S-433—Double Spiral
—1" to 4" dia.

No. S-434—For Small
Flues, ½" to Flues, 1" dia.



SCHAEFER Round Flue Brushes of Single Spiral, Flat Steel Wire No. 8-430—1" to 4" dia.



Flue Brushes of Flat Steel Wire—Spiral No. 8-420—2"x314"x4" No. 8-425—234"x634"x



Brushes of Silver Brite
Rustproof Steel
No. 8-442—3",4",4½",
5" with 5 ft.
handle.



Fibre Furnace Brushes Selected Bassine fib fibre, | Selected Bassine fibre, | flexible wire stem, 4", 5", 6" dia., 48" and 60" handle. | No. 8-444-445



Cleaning Brushes
No. 66—6", 7", 8", 10"
and 12" dia. round style
of Black Tempered Brush of Black Tempered Bruss Wire. No. 666—6", 7", 8", 10" and 12" dia. oblong style of Flat Tempered Steel Wire.



SCHAEFER SCHAEFER
Wire Wheel Brushes
Solid Center Type of crimped steel wire.
No. 276—6" dia. x 1%" face. 8" dia. x 1%" No. 278-No. 278—8" dia. x 1%" face. No. 280—10" dia. x 2" face.



SCHAEFER
Handy Wire Brush
No. 816—For roughing, soldering etc. 6" long, tempered at e e l wire trimmed 1½".



Handle Accordance Brushes

Grade bristles in width, 3%". Tin Handle Acid or Selected grade bristle tin ferrule. Width, 1/2", 5/4".



T. W. Flat Acid Brushes Tinners soldering brush, horsehair filling, 1½" width, 7½" overall. Twisted wire handle.



Radiator or Condenser
Tube Brushes
Twisted in wire handle, selected hair or bristle.
Wide range of sizes.
No. 10—%" dia. x 2"
brush x 6½" overall.
No. 11—½" dia. x 3"
brush x 8½" woreall.



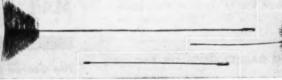
SCHAEFER Curved Handle Wire Brushes No. 810 — 011-tempered steel wire, trimmed 13/4", hardwood block. 14" long. Brush 6", 2, 3 or 4 rows.



SCHAEFER Shoe Handle Wire Brushes
No. 812 — Oil tempered
rustproof wire, 5" brush,
2, 3, 4 rows. Trim 11/4",
overall 10".



SCHAEFER Straight Back Wire Brushes
No. 800-11—0il tempered
a tee I wire. Hardwood
block, 7½" x 2½".
Wire trim, 1¾", 6 x 19



SCHAEFER Vacuum Cleaner Brushes No. 1905—Bassine Fibre Brush. 194" dia. tapered to 3" dia. x 6 ft. long—48" handle with threaded nipple at end.

No. 1909—Bassine Fibre Brush, 194" dia. brush x 10" long. Handle 39" with threaded nipple at end.



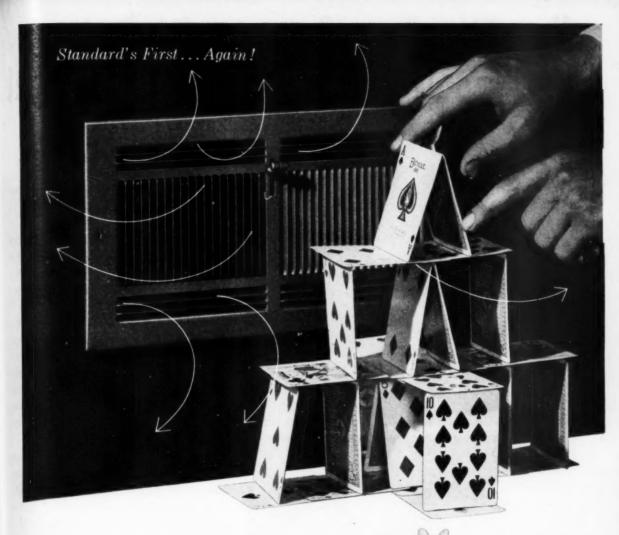
4 ft. Handles with Nipple and Coupling. 5 ft. Handles with Nipple and Coupling.

6 ft. Handles with Nipple and Coupling.

Write for SCHAEFER Catalog of flue and furnace brushes, or for information on any special brushes for specific requirements.

117 W. Walker Street

Milwaukee 4, Wisconsin



there's no trick * to it!

if you use Standard's No. 551...no blasts, no hot spots, no cold corners!

Standard's Perimeter Wall Register (No. 551) ends hot air blast and spotty heating for all time. Its 4-way, 360° diffusion of air provides complete hemispheric heating and cooling comfort. Warm air is distributed evenly along the outer cold walls, resulting in uniform temperature control throughout each room.

- . NEW FRACTIONATOR VOLUME CONTROL . STANDARD SCREW HOLES . SINGLE SHUTTER CONTROL
- . SMART APPEARANCE . FOR SIDEWALL OR BASEBOARD INSTALLATION
- . ACCLAIMED BY THOUSANDS OF HOME AND COMMERCIAL BUILDING OWNERS

WRITE NOW! See for yourself why the Standard 551 is the best perimeter wall register on the market! Mail the coupon for copies of testimonials and case histories of

people who are enjoying real indoor comfort with Standard's new 551 Registers. We'll rush them to you free, along with descriptive literature.







955

How Blaw-Knox Company fabricates milk spray driers from Stainless Steel

Dairy Equipment Department at Mora, Minn., finds Stainless

easy to handle and fabricate

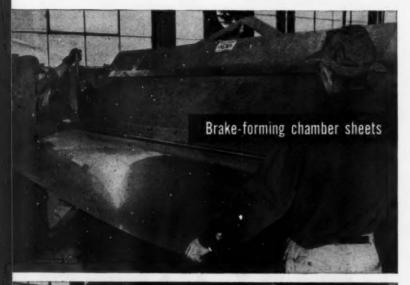
Stainless Steel is easy to handle and easy to fabricate when proper care is exercised.

That's been the experience of the Dairy Equipment Department of Blaw-Knox Company at Mora, Minn., where spray driers, used for dehydrating milk, are being fabricated from Stainless Steel.

The spray driers consist basically of a large chamber and a cyclone, or cone collector. Milk is sprayed into the pre-heated chamber under pressure. When the mist hits the pre-heated air, the milk dries into powder and drops into the chamber, and the spent air is expelled through the cyclone collector.

The spray driers are fabricated in sizes rated at 650, 750 and 1500 pounds of powdered milk per hour. Because of size, only ends and cyclones are fabricated in the shop. The chambers are field assembled.

This experience proves again that "Stainless Steel is not difficult to fabricate—it's just different." And United States Steel representatives will help you minimize this difference by recommending the right grade of Stainless and the most efficient fabricating methods.







FABRICATING OPERATIONS

SHEARING — Sheets of 16 gage Stainless are sheared to size, pre-flanged and laid out.

FORMING—Chamber covering sheets, $48" \times 120"$, are formed an a $3/16" \times 10"$ brake. Ends are brake-formed to a small radius. Stainless Steel used in this operation has never been known to break or rupture in this shop.

WELDING—End assembly is welded using $3/32^{\circ}$ and $1/16^{\circ}$ Stainless Steel Marquette rods. No difficulties encountered and no stress relieving is necessary.

GRINDING—Welds are ground smooth and bufferpolished. Rubber-bonded carborundum wheel is used. Same grit is specified as for carbon steel to the same desired finish.

INSPECTION AND ASSEMBLY—All integral parts are assembled for inspection, then taken dawn and shipped.

Inspection of partially assembled unit

UNITED STATES STEEL COPPORATION, PITTSBURGH - AMERICAN STEEL & WIRE DIVISION, CLEVELAND - COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO

NATIONAL TUBE DIVISION, PITTSBURGH - TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. - UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS

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UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS

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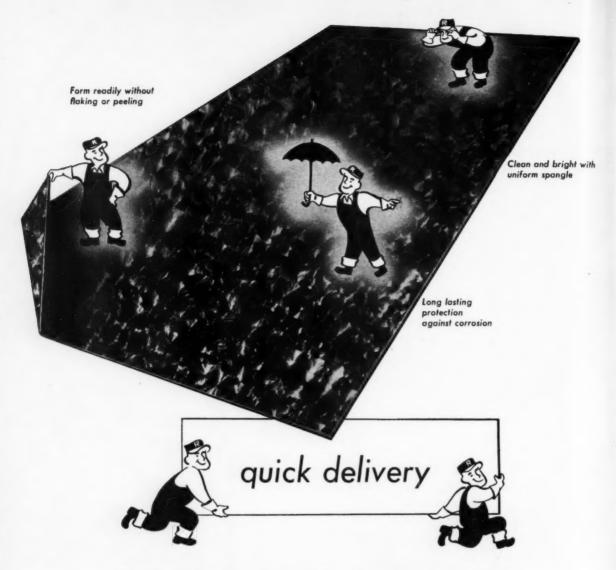
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parts down



SHEETS - STRIP - PLATES - BARS - BILLETS PIPE - TUBES - WIRE - SPECIAL SECTIONS

5-58



Tight-Coat Quality Galvanized

You're sure of getting highest quality galvanized every time from Ryerson . . . and sure of getting what you want FAST because our stocks are the world's largest. We offer many gauges in a wide range of pattern sizes, as well as sizes cut accurately to your order.

Ryerson galvanized is made by a special continuous process that results in a tight bond of zinc coat to steel. This coating takes any forming the steel will take without flaking or peel-

ing. And, tight-coated galvanized looks better, keeps rust and corrosion sealed out all over.

When you order galvanized from Ryerson, remember, you can also get quick shipment of every other steel requirement: hot and cold rolled carbon steel sheets, stainless, Ry-ex expanded metal, angles, bands, etc.

So, for whatever you need in steel, and for metal working machinery and tools as well, call your nearby Ryerson plant.

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK . BOSTON . PHILADELPHIA . CHARLOTTE, N. C. . CINCINNATI . CLEVELAND DETROIT . PITTSBURGH . BUFFALO . CHICAGO . MILWAUKEE . ST. LOUIS . LOS ANGELES . SAN FRANCISCO . SPOKANE . SEATTLE



Don't Waste Your Earnings

MANY WARM AIR HEATING-residential air conditioning dealers and sheet metal contractors are now thinking about their annual income tax returns, and as the deadline for filing draws closer many are inclined to say to themselves, "I wish I had kept a better record of my expenditures during 1954." It's a bit late, of course, to do anything about those items that seemed so apparent at the time, but the details of which — due to the press of business — are no longer clear. However, it's not too late to do something about the year 1955, with a resultant saving when April 1956 rolls around.

First of all, a reliable record-keeping system is needed. Then the habit of entering ALL expenses must be formed, since a record system will be of little value unless it can give accurate information. Some dealers believe in using their own office staffs to handle all their bookkeeping, others use outside services, and still others a combination of the two. In using this combination system, a dealer has his own staff record daily purchases and payments in separate journals and has an outside accounting firm call for the books at either weekly or monthly intervals, whichever is most convenient to the dealer.

Standard bookkeeping journals can be made more effective by the addition of two columns in the purchases book. These columns can be used by the accountant for recording reference numbers as he prepares the formal set of books.

Any good professional accountant will help organize the information to be reported on the income tax return. He will analyze the accounts receivable to be sure all worthless accounts are written off and sufficient reserves are provided against possible losses. He will also verify inventories to make sure taxes are not paid on obsolete or worthless equipment. (The preparing of the tax return also gives the forward looking dealer the opportunity to examine his present equipment and determine its value to the business. He learns how much has been spent on repairs, and if the equipment is obsolete he realizes the necessity for replacing it with more modern tools and machinery.)

Modern business operates on such a close margin between profit and loss that every step must be carefully watched by management if the company is to show a profit at the end of the fiscal year. The best mirror of the entire business operation is an accurate bookkeeping system that will show when earnings are being wasted. It's been said by financial authorities that a good accounting system doesn't cost anything — it makes money.

5



WELL LIGHTED SHOP aids in turning out quality products in a minimum of time

Sheet Metal Contractor's Successful Business Formula

... for smoothing out the flow of work through the shop and on the job is based around a management committee which meets once a week



By Ward W. Grimes

EACH MONDAY morning a business session is scheduled with the management committee. The meeting's activities are directed by Nat N. Leas (second from right)



MODERN BUILDING with showroom and workshop are assets which help build public acceptance

To smooth seasonal peaks and valleys on a business chart it is necessary to have an organization which can regulate its activities to meet the needs of an active community and give attention to maintenance of existing installations. Such an organization is in operation at Conditioned Air and Refrigeration Co., Fresno, Calif. President of this company is Nat N. Leas, who is also third vice president of the Sheet Metal Contractors' National Association. In addition to his duties as president of the company, Mr. Leas is now actively engaged in helping the sheet metal contractors of the San Francisco Bay area develop a convention program that will please all who attend the annual meeting of the national association beginning April 27.

As the name of the company implies, its activities consist of handling conditioned air; however, the function of providing conditioned air goes beyond the company name. There is no phase of the air conditioning field that is not handled by the various departments of the business. If the order calls for heating, cooling, ventilation or sheet metal fittings, the shop will quickly and efficiently produce it to specification.

Uses Modern Tools in Shop

The sheet metal shop has all the regular shears, brakes, punches, presses and power rolls along with some recent additions which have helped save fabricating time and cut costs. Among the new power tools is a pneumatic seam setter for forming Pittsburgh locks. Also among recent installations is a foot operated duct notcher that

cuts time off the construction schedule.

Some of the recently completed ventilation projects deal with such applications as will be found in schools, hospitals, municipal buildings and wineries. A project now under construction for the Fresno State College will require 100 tons of sheet metal ductwork.

The company specializes in solving complicated installation problems where standard equipment will not fit into the space allotted. Here the company builds its own equipment to meet the specifications. Usually, when this type of situation develops much time can be lost due to need for the skills of the various trades involved; how-



GOOD PUBLIC RELATIONS are developed through exhibits and personal services offered at this display booth erected at fairs and home shows



ENGINEERING DEPARTMENT functions best when located in a clean, quiet room

ever, the reputation of Conditioned Air has been built upon situations of this type. The company has the staff to enable it to fabricate and install the entire project. Along with sheet metal workers will be found heating specialists, pipe fitters, refrigeration mechanics and welders.

As in many other parts of the country, Fresno has been enjoying public acceptance of residential air conditioning and Mr. Leas' company has not overlooked this growing field. He says, "No job, large or small, is given preference in our organization. We serve our customers equally."

Management Committee Directs Activity

It is the management of the company that directs its activities toward development of a reputation which has grown with each passing year. The business organization of Conditioned Air Co. is built around a management committee which meets each Monday. The subjects discussed at these meetings relate to jobs in progress, analyses of recently completed jobs, reviews of sales programs and the overall effectiveness of the business as related to profit obtained vs profit anticipated.

This committee includes the general manager, sales manager, chief engineer, head estimator, controller, job superintendent and the sheet metal and refrigeration department foreman. Out of these round table discussions job costs are pared, wasted time eliminated and misdirection overcome.

Mr. Leas says through this system of management the company has been able to pinpoint every responsibility of the workers from the bench to the final installation and testing of equipment. The committee members can see what their ideas have accomplished and make further studies for even greater improvements.

Since most of the commercial and industrial jobs are on a bid basis, Mr. Leas says his company is forging ahead in this field because "we know our costs and keep them down" through a system of records that start from the first inquiry and continue all the way to the finished installation. "We make records take the place of unneces-

sary expenditures," he commented. "When we make an estimate we know exactly every detail involved because of the records we keep on every job."

Any organization which wants to grow with its industry needs to be alert to local business activity. Sources for this information can come from the most unexpected places. Mr. Leas finds many job leads in the notices of building permits issued daily as published in the local newspaper. Other leads come from direct mail pieces, radio and newspaper advertising, a booth at the Fresno District Fair and participation in home shows.

Probably the most satisfactory leads obtained by the company come through a system of followup calls on existing customers. (Approximately 60 percent of the company's customers are on a monthly service contract which prevents breakdowns in operations, assures satisfied customers and builds up a reputation for reliability.)

Annual Maintenance Contracts Offered

The way is paved by letters written in the spring and fall calling attention to the necessity for seasonal inspection and servicing of equipment. The home owner recognizes an ounce of prevention is better than a pound of cure and is most appreciative of the interest shown by the company. Usually before the job is finished the home owner voluntarily suggests that a call be made on some of his friends who are interested in air conditioning or heating systems.

When using newspaper and radio advertising the Fresno firm offers a brochure setting forth the most minute details of the service offered along with charts and illustrations easily understood by homeowners. Mr. Leas is a strong advocate of sponsoring FM music programs which he declares indirectly pay off big dividends. The listeners write letters telling the company what kind of music they would like to hear.

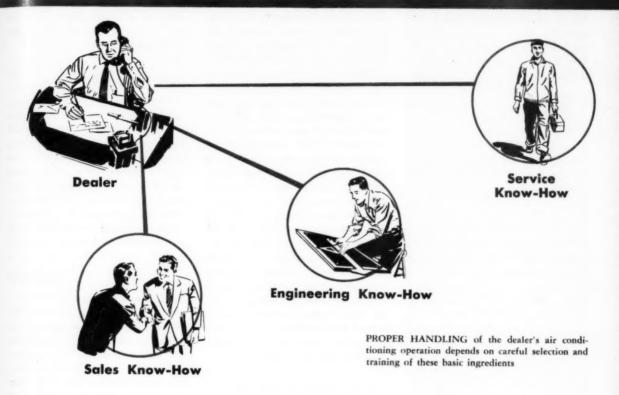
At the Fresno District Fair, equipment available for installation by the company is on display and is viewed by thousands of visitors annually. Mr. Leas says the people who are really interested in air conditioning and heating plants not only ask for literature but also spend considerable time going over the sample blueprints available in the booth. This same interest is evidenced in the exhibits at the home shows.

One of the most unique advertising ideas used by the company is a piece of literature stressing the fact that home owners can choose their own weather through air conditioning.

Government weather charts are reprinted to show the maximum temperature expectations for the community with an offer of free planning service for temperature control in the office, home or factory. Emphasis is placed on the ability of the home owner to control heat and humidity for health and comfort.

Associated with Mr. Leas are John C. Rowden, chief engineer, and John Geringer, the sales manager. The firm has 22 employees and a fleet of 10 trucks.

RESIDENTIAL AIR CONDITIONING



How to Organize an Air Conditioning Department

... which will enable the warm air heating dealer to gear his present organization to handle sales, service and engineering problems of cooling equipment

By S. W. Reid Air Conditioning Engineer Gilbert Associates, Inc.

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A CONSPICUOUS FACTOR in the post war expansion of the economy of this country has been the tremendous promotion of and resulting demand for comfort air conditioning. Plans for practically all new large structures include it in many areas, and air conditioning in modernization programs is usually one of the primary considerations.

Residential air conditioning has be-

come as indispensable in some of the warmer sections of the country as is central heating in the colder areas. Activity in residential summer cooling is nationwide. Because it is so closely allied with the problems of forced warm air heating, the warm air heating dealer has provided a ready-made channel through which residential cooling products can be distributed in the volume necessary

to achieve the quantity production which will undoubtedly be required.

The era of residential air conditioning is here. The public is ready for it, the building industry is sold on it, the manufacturers are producing it. Warm air dealers who recognize the trend are preparing their organizations to keep pace. Their success in branching out into the cooling field may largely depend on what steps are taken to establish the new line as a regular part of the business. There is much help that can be obtained for this undertaking from manufacturers - especially the warm air heating equipment manufacturers who are now entering the cooling business. These firms can offer financial advice and can provide a variety of sales helps and technical training material. This article offers a few suggestions with respect to some of the personnel and organizational problems a dealer may have to consider in expanding his business.

A dealer or contractor operation has two functions as far as the public is concerned. One is selling, the other servicing. The selling function reguires salesmen in the front line who are backed up by accounting and engineering know-how at the office. The service function requires mechanics in the front line, backed by engineering and responsible service management. Both require overall management at the office to control and direct them in a manner which will result in growth and profit for the dealer. Both functions also require capital to provide the necessary selling and servicing tools such as floor space (for display, office, storage and shop), trucks, cars and all the miscellaneous furnishings, facilities and equipment which are needed to operate a business.

Developing Sales and Service

The established dealer who has a going warm air heating business will probably already have many of the prerequisites he needs to enter the cooling field. Because heating and cooling sales and service are both seasonal in nature, the peak activity in each will not coincide. This per-

mits dual use of floor space and should allow some of the personnel to take on the additional work load associated with the new cooling business without particular hardship. The big problem will be acquiring the know-how of air conditioning in both the sales and service departments.

The dealer can approach the problem in several ways. The most direct solution is hiring new men who have had wide experience with cooling to staff both the sales and service departments. These men should be capable of operating independently of supplementary engineering assistance. A second solution is to hire an engineer with a technical and practical background in air conditioning and the ability to conduct a training program for personnel who will subsequently engage in sales and service work. Another possibility is sending personnel with technical backgrounds and sales or service experience to an air conditioning training school offered periodically by manufacturers of cooling equipment or by certain public or private schools.

Locating the Right Salesman

Whatever the approach, new men will probably be required. For every man on his payroll the dealer must make an investment, whether it be for the tools, equipment and training which the service man requires, or for the training and promotional aids which the salesman needs to produce. The investment to be made will be substantially independent of the type of man for whom it is made, but the return on the investment will be directly affected by the man's personality, experience, knowledge and energy. Since the dealer is investing money to make a profit, it will certainly be well worthwhile to hire only men of the highest caliber and maximum talent for their particular jobs.

The mechanism for finding and interviewing prospective salesmen is conventional. A dignified advertisement in a newspaper or magazine should be carefully worded to attract only serious minded individuals. It is a waste of time for both parties unless the minimum requirements are met. The advertisement should outline briefly the type of work to be done and the type of person being sought. It should call for a written statement of qualifications in education and experience and the names of several references.

Read Between the Lines

Much can be judged from the written applications alone before any interview is granted. Neatness and organization in the application are a clue to a man's business habits. So are the manner of expression and the correctness of grammar. The stated experience and the references listed will make possible elimination of all but those who are likely to fit in with the least training.

What should a dealer look for in the background of applicants for jobs as air conditioning salesmen? The most desirable man so far as experience is concerned is one who has worked in the field of heating and air conditioning and who understands the various products, their application and the principles of salesmanship. Such men are hard to find unless the inducements offered are attractive enough to tempt them to make a change from their present jobs. These men need not necessarily have had cooling experience. If they know warm air heating, they can be trained to sell cooling.

Next to the man with heating or cooling experience might be the man who has sold equipment and supplies to the building industry. This man understands construction problems and knows how to talk to engineers, architects, builders and building tradesmen. He is qualified to help home owners with their air conditioning problems, many of which involve construction. This man will be able to read blueprints and estimate costs of labor and materials for various types of construction. He will need training in air conditioning and the product line.

A third type who might be sought as a potential air conditioning salesman is the specialty salesman. This man knows how to sell and requires little training in that direction. He is not an order taker, but a man who knows how to meet stiff competition. He should have experience with products of a technical nature so he will be more readily able to absorb the training for air conditioning.

A man with an engineering background is always worth considering. He will need most of his supplemental training in salesmanship. This should not be undertaken unless he has the type of personality needed to sell at the consumer level. Many engineers are successfully engaged in selling highly technical products to other engineers who understand them. Some of these men would fail miserably if they tried to sell a technical product to the average consumer, such as would be the case were they to sell residential air conditioning.

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Qualifications for Salesmen

In addition to their experience, salesmen must present other qualifications. Good appearance is one. The salesman will be calling upon home owners, architects and builders. The first impression these people form of him will be the first impression they have of the organization which he represents. He should be neatly and conservatively dressed and well groomed so the impression he makes will be favorable and will instill confidence in the prospective buyer.

Educational background measures a man's ability to absorb training. This is especially important in younger salesmen who lack long years in the school of practical experience. A high school diploma should be a minimum requirement.

Natural courtesy, politeness and good manners are three very important characteristics of a potential salesman. The dealer can't afford to spend time developing these attributes in a salesman. A salesman with a chip on his shoulder will only antagonize a prospect. By the same token, the man who gives the impression that his politeness and courtesy are not sincere is quite likely to draw a similar reaction.

When the selected applicants are interviewed they should be encouraged to talk of their past experience.

During the interview, their general appearance, bearing and behavior should be noted as well as such things as the manner in which points presented are organized, skill in use of the language, force of statements, pleasantness of personality and courtesy. The dealer should ask himself, "Is this the type of man I would like to have working with me day in and day out?"

If the answer is yes, it is now up to the dealer to interest the applicant in the business. The product and type of work should be described. The dealer's facilities should be inspected. The sales territory should be discussed, and the various routine procedures, including compensation, should be outlined so the applicant can picture himself in the job before making his decision. The dealer should not forget that any man who is not completely sold on the products being handled or on the methods of doing business under which he must work will never make a good salesman.

Although the preceding paragraphs were directed primarily toward the problem of hiring a salesman, the dealer can readily fashion similar criteria for selecting other personnel.

Heating Background Helpful

Let's assume the dealer has been able to hire a salesman who has had experience in selling wet heating systems in the residential and commercial markets. This man is making a change because he has seen the trend toward year 'round conditioning with air. He is eager and willing to spend his own time studying the principles of air conditioning and the product line from manuals supplied by the manufacturers from whom the dealer holds franchises. He is also interested in attending a ten day training course in air conditioning sales which the cooling equipment manufacturer conducts twice a year at his nearest district office. With the experience in estimating heating loads, in making job estimates and in selling, and with the brief training this man will undertake, he should quickly be prepared to launch his new career as a full-

FIRST WE EXPLAINED FUNDAMENTALS

. . . in Mr. Reid's series of 20 articles (concluded in the May, 1954 issue). The basic operating characteristics of residential cooling equipment were described in detail.

NOW SPECIAL ATTEN-TION TO SPECIFIC PROBLEMS

- ... in a new series based on the author's wide experience in the field. Pointers on service and application techniques have been presented in articles published in the following issues:
- Sheet metal contractor installs year 'round air conditioning system in branch bank (June 1954).
- 2) How to service hermetic condensing units (July 1954).
- 3) Keeping cooling coils operating at peak efficiency (August 1954).
- 4) Refrigerants for residential air conditioning systems and how they perform (September 1954).
- 5) Methods used to lubricate residential cooling systems (October 1954).
- 6) Locating troubles and what to do about them (November 1954).
- 7) How to charge a summer cooling system (December 1954).
- Making maintenance contracts pay off in sales and service (January 1955).

time air conditioning salesman. By the same study, the dealer's warm air salesmen could readily prepare themselves to sell cooling equipment.

The type of salesman described is not self sufficient in that he lacks experience in air conditioning. He will be capable of finding prospects, selling them on the idea of air conditioning and on his products, gathering survey data on a prepared form, making the sales presentation and closing the sale. He will need technical help from a man of considerable air conditioning experience for calculating unusual loads, selecting equipment, laying out duct and distribution systems, laying out unusual control systems, analyzing the survey for unusual problems connected with plumbing, wiring or equipment location, preparing the estimate and making the necessary adjustments after installation.

Engineer is the Backbone

The man who gives such assistance is usually the company engineer, who may also double as senior salesman and service manager until business volume warrants his devoting full time to engineering problems. Whatever his title, every air conditioning dealer will want such a man on his payroll, since his function is the backbone of the entire operation. The knowledge and experience he can bring into the business cannot be obtained from any short course of study.

To round out the staff of our organization, we will want to hire a top notch refrigeration mechanic an even tempered man who can take it with a smile, for he is the man who will become the cooling service manager. He will be responsible for all installations under the direction of the engineer, and he will eventually get all the phone calls from customers for service. It will be his job to keep the customers happy. As the dealer starts his air conditioning venture the prospective service manager will spend a lot of time on the job training other men, perhaps the same ones who have been doing the warm air heating work during other seasons.

Whether the sales, engineering and service manager's duties are assigned to three, two or one individual makes no particular difference. The size of his operation and the talents which he can find in available men will determine how many men the dealer will need. The certain thing is that all three abilities must be found and successfully combined if the new undertaking is to prosper.

Coordinating the Operation

Taking up the example again, let's assume the dealer or contractor has found the men he needs to bring into his organization the expert sales, engineering and practical know how of air conditioning. He provides the salesmen with prospects, the engineer with product information, the mechanic with tools and the group with financial backing. Does he then turn them loose, wish them well and sit back with hopes for the best?

Of course he doesn't. The dealer himself has a big responsibility for the success of the new branch of his business. As manager of the sales operation, for example, he should do the following:

- Organize and coordinate sales activity.
- 2) Keep active, constant control over it.
- Make sure constant sales effort is applied to every prospect until the sale is made or lost.
- Call regular sales meetings to present interesting, educational and inspirational programs.
- 5) Help salesmen close sales.
- Take advantage of every opportunity to build salesmen's production.

The dealer who has a growing warm air heating business is already well acquainted with such responsibilities and should have no problem in expanding his operation to include the new air conditioning activity. It may be necessary for him to budget his time a little more carefully and so operate more efficiently. This can be aided by setting up a prospect card system. For each new prospect a triplicate set of cards is made out. One card is kept in an alphabetical

file for ready reference, the second is placed in a date file under the date when the next call is to be made, and the third is given to a salesman.

At the end of each day all cards for which calls have been made are brought up to date from reports made by the salesmen and are refiled under the date of the next scheduled call. At the same time, all prospect cards filed under the next day's date are discussed. In this way the dealer has a running record of what his salesmen are doing and what jobs may require his personal attention.

Service Department "Sells" Too

In addition to his active leadership in sales, the dealer must also keep in close touch with what is going on in the service end of his business. A residential air conditioning installation usually requires more follow through than does a warm air heating installation. One reason is that for economic reasons cooling equipment must be matched more closely to the load than warm air equipment. This means more care must be given to system adjustment since there is less margin of safety in capacity. Another factor is the more complex nature of the cooling equipment itself.

The business growth of a dealer closely parallels the growth of his reputation in the community. His reputation depends largely on the type and quality of his work and service. Air conditioning systems shouldn't be installed and forgotten. The customer is interested in results. The dealer must make sure the job he sells has met with customer satisfaction and that it will continue to provide the customer with the comfort he wants.

If it is to show an annual profit, the service department must be organized to operate efficiently. Much time can be consumed in correcting mistakes which could have been avoided. Proper management involves planning service activity as carefully as sales activity. The public knows the dealer through the people who represent him. In this respect, the service man can do just as much of a selling job as the salesman.

A NEW APPROACH

... to modern heating and cooling techniques upon which future improvements in heating systems should be based is presented through complete analysis of the known factors and practices now observed by progressive warm air heating dealers. The authors propose to show how the information now on hand can be developed to provide equipment and installation techniques superior to present practices. Some of the subjects to be covered in this series are moisture conditions, continuous blower operation, adjustment of fuel input and combustion efficiency, venting of flue gases, noise, temperature control and distribution, temperature differentials and drafts.

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Know the Standards for Your Heating Installation

By S. Konzo and H. T. Gilkey University of Illinois

Thorough knowledge of what can be expected of a heating installation in a certain structure is a valuable asset in making a bid. Here's the first in a series designed to equip dealers with that information IN MANY CONTRACTS for installation of heating equipment the statement appears that "the heating contractor shall guarantee that the heating system will maintain a temperature of 70F when the outdoor temperature is zero deg F." Guarantees of this type have become part of the legal terminology of the industry and are widely accepted. However, when one dissects the statement, a number of interesting points are brought out which make it seem that the guarantee is not precisely stated. For example, probably nowhere in the contract is there any statement concerning the location at which the 70F is to be maintained. It could mean the thermostat location; it could just as well refer to the 60 in. level in the middle of the key room; or it could refer to all of the rooms in the structure. Nor does the statement define what we mean by a temperature of 70F. For example, one part of a room could be 75F and another corner 65F giving an average of 70F. Or, during one part of a burner cycle the room temperature could be 76F and 30 minutes later could be 64F, also an average of 70F. Even though the outdoor temperature might be specified as zero or -20F, it may be difficult to make a test of the heating system when the outdoor temperature is precisely zero or -20F. What happens when the outdoor temperature is zero F at 4 a.m. but 15F during the day? It becomes plain from these questions that some so-called guarantee statements are not precisely worded.

". . . the heating dealer should watch for features which may cause trouble and suggest changes in construction to overcome them"

The purpose of these articles is not to tear down long cherished statements, nor are we trying to replace this venerable statement with new terminology. However, we propose a set of engineering standards that may prove of value to the heating dealer who is seriously interested in improving his installations and in finding out how far they diverge from reasonably attainable goals.

Heating Performance Standards Needed

As far as we can determine, no set of standards exists which measures the performance of a heating system in a specific structure. The Yardstick for Classifying Warm Air Winter Air Conditioning Systems, published as Manual 8 of the National Warm Air Heating and Air Conditioning Association, served a distinct purpose at a time when no criterion was available to distinguish between a booster-gravity system and a forced-air system as we now know it. Emphasis in the Yardstick was necessarily on furnace approval labels, duct construction and fire-safe installation practices, and little was said about comfort expectations from a well installed warm air furnace system or cooling system.

The material presented in these articles is, therefore, subject to controversy and necessarily subject to personal opinions. It should be clearly understood that the statements and opinions expressed are those of the authors alone and do not necessarily express the views of either the University of Illinois or the National Warm Air Heating and Air Conditioning Association. Controversial or not, real progress in the science of heating and air conditioning depends on our being able to measure our effects and evaluate the conditions we have produced.

Comfort conditions are dependent upon not only air temperatures, relative humidities, and air motion, but also on nature of house construction and the manner in which the furnace is operating. Hence, the proposed standards cover the following three phases:

- a) House construction
- b) Furnace performance
- c) Comfort conditions

Altogether 15 or more separate items can be considered under these three phases. In these articles we attempt to explain these considerations in detail and propose numerical values for measuring them. This does not imply that every heating dealer must become a research engineer; it does suggest that he become acquainted with factors which many engineers consider essential to a successful heating plant.

Any scheme of this nature is arbitrary and will depend upon the judgment and opinion of the one who first proposes the standard. For example, a house which has a design heat loss of 50 Btuh for each sq ft of floor area might be considered either well built or poorly built, depending on local practices in building construction and the cost scale of the house. It is most tempting to set up an arbitrary scale, ruling that a design heat loss between 45 and 55 Btuh per sq ft of floor is good, fair or poor. Actually, matters are not so sharply defined. One house which is built extremely well at great cost may have a heat loss of 50 Btuh per sq ft of floor area because of large expanses of picture windows, whereas another house with the same heat loss value may have no insulation but very small window areas. The first house could be considered well constructed and the second house poorly constructed, yet they may have the same heat loss index. Therefore, rather than classifying any house as excellent, good, fair, or poor, we propose to classify them A, B, C, or D. In other words we do not want to imply that a given house is poorly constructed from the standpoint of weatherproofing. We do want to imply that the house falls in a heat-loss classification D, which normally makes the problem of the heating contractor more difficult than one which falls in the classification of A, B or C.

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Factors Influencing Heating Performance

Under the heading of house construction, four factors can be considered of specific interest in considering performance of the heating system:

- 1) Degree of weatherproofing
- 2) Moisture conditions in house
- 3) Moisture conditions in crawl space
- 4) Slab floor construction

The heating dealer usually does not have much influence in determining the construction features of a house. However, some complaints which arise from the four sources above may be considered by the home owner to be the responsibility of the heating dealer rather than the building contractor. Hence, the heating dealer should watch for features which may cause trouble at a later date and suggest changes in the construction to overcome them.

The best index of weatherproofing of a house is the design heat loss, although it is not sufficient in itself. For example, a 60,000 Btuh heat loss could apply both to a well insulated large house and to a poorly protected small house. Or it might refer to a large house in a mild climate or to a small house in a severely cold climate. In other words, the size of the house should be given consideration. We could consider two possible indices: a) design heat loss per cu ft of space, or b) design heat loss per sq ft of floor area.

Either index would combine the design heat loss and some number which refers to the size of the space being heated. The index which utilizes the volume of heated space is probably more desirable than that which depends upon the floor area, since variations in ceiling height would be taken care of. However, because the floor area is more readily determined than the house volume and since the Federal Housing Administration has utilized this value, we have favored the index based on floor area alone.

Heat Loss Considered in Mortgage Loans

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A value of 60 Btuh per sq ft of floor area has been considered by FHA as the maximum permissible for houses in a climate such as that of Illinois. In other words, houses with design heat losses exceeding the 60 value require modification before qualifying for mortgage loans. For our standards, therefore, we have accepted this value of 60 as a suitable maximum for climates in which the outdoor design temperature is between zero F and -20F. The question remains as to what might be considered a practical minimum value for the same climate.

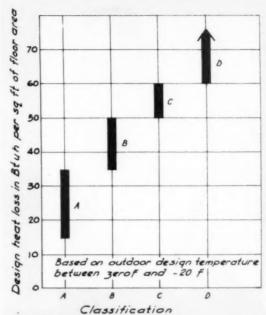
For this purpose, the authors have considered a small building 24 × 36 ft, having a floor area of 865 sq ft. If the building is one story, built over a basement, with fully insulated walls and ceilings and without any windows whatever, the design heat loss would amount to only 13,100 Btuh, or about 15 Btuh per sq ft of floor area. In other words, the practical minimum value for any building is not 0 Btuh but about 15 Btuh per sq ft of floor area.

For the purpose of classification, the range of heat losses between 15 and 60 Btuh has been arbitrarily divided into the following groups:

- A) 15 to 35 Btuh per sq ft of floor area.
- B) 35 to 50 Btuh per sq ft of floor area.
- C) 50 to 60 Btuh per sq ft of floor area.
- D) Over 60 Btuh per sq ft of floor area.

This classification was based on outdoor design temperatures between zero and -20F.

Strictly speaking, the values in the above table are suitable only for design outdoor temperatures between about zero and -20 F. For example, in a very mild climate for which the design outdoor temperature is only 30F, these values would be cut in half, provided that extensive weatherproofing was in common use. However, surveys of prevailing building practice in the mild climates indicate the magnitudes of heat losses are not materially smaller than those in colder climates for equal size houses. In other words, a well built house in a cold climate will be provided with 4 in, thick insulation,



CLASSIFICATION OF houses according to heat loss

storm sash and weather stripping, whereas a similar size house of average construction in a mild climate may lack all of these. In practice, therefore, the values in the above classification may be applicable to regions other than those for which the design outdoor temperature is between zero and -20F.

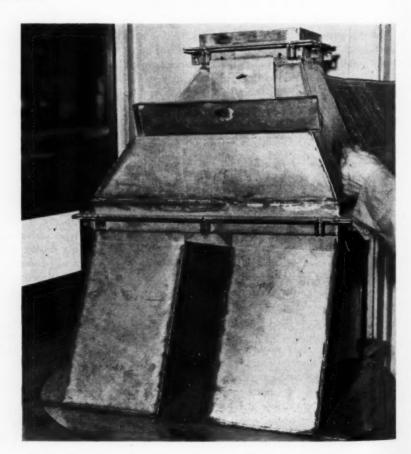
It is true that classifying a given house as A, B or C does not in itself give the heating dealer much information. It does tell him that a house in the A class will be relatively easier to heat satisfactorily than one in the D class. Furthermore, if all other details of the house construction fall in the D class then the heating dealer is amply forewarned that the structure is a potential troublemaker even before he has made a bid for the heating system.

Actually, it is not fair to use a single set of values for all types of houses. For example, a two story house will have a smaller value of heat loss per sq ft of floor area than will a one story house, even if both are of comparable construction. Similarly, a one story house with basement will have a smaller value of heat loss than a one story house built over a concrete floor slab or over a crawl space, since the heat loss through the floor is included in the latter case but not for the house with basement. Consideration has been given to the use of separate sets of values for different types of houses and for different localities; however, since the standard is arbitrary to begin with and the influence of house shape is relatively minor, the single set of values has been retained.

The next article will continue the discussion of standards for heating systems.



TO ASSURE a dust-tight conveyor system, each step of the fabricating process is carefully checked against blueprint specifications



CONVEYOR SYSTEM had to be split to pass around a floor joist. The open hatch is a sampling point

a Stainless Steel

Powder Conveyor System

Dust-tight conveyor systems are tailor-made jobs that require attention to each detail of the fabricating process. Here's one sheet metal contractor that builds repeat business by turning out exact work of the highest quality



In factory-filled Chicago, orders for equipment such as stainless steel tops for supermarket checkout stands, industrial machinery guards, dust collectors and blow pipe systems are routine.

One sheet metal shop that enjoys considerable repeat business of this type is the L. O. Johnson Sheet Metal Co. This company specializes in complicated fittings that are fabricated with conventional shop equipment.

A typical order which was recently received called for a series of conveyor systems for a baking powder plant that mixes and packs a dessert gelatin and custard powder. The factory engineers had designed a new conveyor system to handle an increase in sales volume, but gave the Johnson company the job of figuring out the details of fabrication as the conveyor system had to be adapted to existing machinery and physical characteristics of the plant.

The plans, as given to the sheet metal contractor, called for a hopper and floor liner on the fifth floor to carry the raw mix to another hopper

PACKAGING MACHINE was supplied with custard powder through these sanitary stainless steel fittings and a mixing machine along with a sampling adapter combined with a floor liner located on the third floor. Two additional hoppers were needed to carry the mixed powder to the packing machine, which was located on the first floor.

Six Different Systems

The order called for six such systems. Except for the top hopper-liner, each system was slightly different and had to be fabricated to meet the physical requirement of the building. The specifications called for all parts of the system to be stainless steel.

The fifth floor loading hopper had to have doors that would be held closed by springs. The door was opened by the weight of a load of raw material and remained open as long as there was material being fed into the hopper. When the loading was complete, the hopper doors were designed to close automatically by spring loaded hinges. The hinges were of the piano type and ran the full length of the hopper door. These hinges were located inside of the hopper but were not fixed in their positions by welding as it was necessary to remove the hinges periodically for cleaning. It was found that stainless steel bolts provided the best method of attachment.

Salvatore Cerniglia, the shop foreman, said that placing a hinge in this position was like figuring out a mechanical puzzle. "We had to plan how to do it before we started fabricating the hopper, as space did not permit its installation after the parts were assembled," he said.

The problems involved in fabricating the remaining sections centered about the exact specifications of the various shapes which had to fit perfectly when assembled into a complete system.

Floor Joists Create Problem

The complicated-appearing sampling adapter and floor liner that led from the mixing machine was actually one of the easiest sections to build. It had doors for cleaning its filter screen and for the taking of samples of the mixed powder. This adapter was made of flat sheets welded to provide dust-tight seams. Other fittings called for many curved surfaces. The floor liner attached to this adapter had to be split into sections in order to go around a reinforcing floor joist, with the openings occurring at different locations in each system.

Following the sampling adapter and floor liner were two more hoppers that led to a packing machine. These hoppers presented perhaps the toughest layout and fabricating problems of the whole job.

The top hopper, 40 in. high, had to bring the chute from a 33 in. diameter circle at the top to a 6×21 in. oval offset at the bottom. Since 36 in. wide stainless steel sheets were used, the hopper had to be made in

sections and welded together. The big, curved surfaces were rolled to exact specifications on a hand brake. The inside welds were finished smooth with a flexible surface grinder. This had to be done on all surfaces within the system to prevent the powder mix from collecting at the welded seams and creating an unsanitary situation.

Standard Equipment Used

The final hopper was a small inverted V that channelled the mixed powders into a packing machine through two supply openings. The packing machine feed chute was 6 × 21 in. at the top which tapered to two round 6 in. collars for adapting to the packing machine. Although the tapered tubes presented no special fabricating problem, they had to be welded to an angle iron flange at the top to provide a dust-tight connection at the packing machine.

All parts were fabricated with standard shop equipment — an 8 ft, 16 gage brake, a 36 in. foot operated shear and hand tools.

"The one thing we did worry about was the possible waste of expensive 18 gage stainless steel," Mr. Johnson said, "but it turned out we were able to cut most of the fittings from the scrap corners."

Upon completion of this order, Mr. Johnson remarked: "Some of these commercial jobs are so interesting we're sorry when we finish them."

More Risk Capital Needed for Increasing Labor Force

A MILLION JOBS a year, on the average, will have to be created during the next 20 years as a result of population growth, according to the U. S. Chamber of Commerce. About \$13.3 billion a year in new capital will be needed to supply jobs for the 20,000-a-week addition to the labor force, the chamber estimated. These conclusions are presented in the study, Investment for Jobs, which includes proposals to encourage the investment of risk capital essential to the

needed increase in money available to handle the increased labor force.

"There appears to be no serious shortage of loan funds," the chamber points out, "but there is a shortage of risk capital."

To increase the incentive for risk investment the chamber urges a reduction in government expenditures, followed by these tax changes:

 Taxation of persons with highly fluctuating income based on average income over a number of years.

- A reduction in the progressive personal income tax rates.
- Holding the corporation income tax rate against any further increase and working toward a gradual reduction.
- Reduction in the capital gains tax and more adequate provision for offsetting of losses so existing penalties against the economic shifting of ownership of assets may be removed.
- Further liberalization of depreciation policy.

Here's What Happened at Air Conditioned Village

Reports covering noise of installations, heat and humidity gains, and initial and operating costs show the value of the experiment for future improvements in air conditioning

THE AUSTIN, TEX. research project provides an opportunity to advance the technology of year 'round air conditioning on all levels. The preliminary report issued by the National Association of Home Builders at their annual convention in Chicago January 19 shows that the data obtained by the mobile laboratory of the National Warm Air Heating and Air Conditioning Association can be used to improve equipment performance, reduce operating expenses and strengthen the position of the warm air heating dealer as the intermediary between the user and the manufacturer.

In his report on the Air Conditioned Village, C. W. Nessell, Director, NWAHACA Mobile Laboratory, said: "Generally, the owners are well satisfied with the comfort cooling the installations are giving and are not disturbed over the cost.

Noise Factor Needs Attention

"Much of the equipment was operating at a higher noise level than the 40 decibels suggested in the FHA requirements. Placing a noise level ceiling on cooling equipment and none on heating equipment seems inconsistent since some of the noisiest components are used for both. Installations with a lower noise level will depend upon the united efforts of the manufacturers, builders and architects. While the manufacturer should have quiet equipment, the builder and architect must arrange to physically and acoustically isolate the equipment from the structure.

"The importance of accurate heat gain calculations is emphasized. They are an essential guide when selecting equipment capacity to give the best combination of air cooling and dehumidification. Recommended procedures for making these calculations should include "U" factors for every type of construction used.

"Builders and architects must give greater attention to the orientation of the house on the lot, and so arrange the glass areas that the heat gain is minimized.

"On many village installations there was a pronounced humidity regain in room air immediately after the end of an on-cycle of the compressor that appeared to be greater with equipment in which the evaporator coil was mounted horizontally or at a 5 deg angle. This regain should be eliminated or minimized.

"A comparative analysis of the operating cost of equipment with air cooled and water cooled condensers indicates the air cooled units cost slightly more to operate in Austin. This observation applies to Austin only, and may not hold true in areas with other climatic conditions. Further, it applies only to clean air cooled condensers and to water cooled equipment with clean water passes that are not encrusted with lime and other waterborne deposits. This advantage of the water cooled unit may disappear in Austin because of the hard water."

Initial Cost Variations

Project manager for the Air Conditioned Village Research Committee of the NAHB is Ned Cole. In his report relating to the variations noted in initial costs of installing the air conditioning equipment, Mr. Cole said:

"The installed price of equipment in each of the houses in the village was set by contract in order to equalize the cost to the various builders involved; however, time studies were made of installation time.

"These time studies and information gathered by a committee of the builders of the village are the basis of the following report:

"'Installation costs varied from a high of \$453 to a low of \$138 with an average of \$285. The electrical installation was the highest single item with duct installation second."

"In addition to the initial installation costs, the following costs were reported during the first three days of operation which should be added to the above costs:

- Balancing system required an average of five hours by trial and error methods including balancing air flow and tinkering with the electric control system and repair of faulty duct insulation.
- 2) Refrigerant leaks in split systems each split system developed at least one refrigerant leak. Search for and repair of the leak, reinsulation of the pipes and recharging the system cost an average of \$30. There was some disagreement as to the responsibility for the leak and for the resulting expense.

"The final report will be released early this summer. It will have additional information on many phases of equipment performance covered in this report and subjects not yet covered, such as air flow rates, wall and ceiling temperatures, and the observed thermal lag of the structure."

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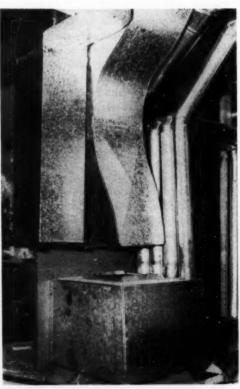


SUBURBAN MEDICAL CENTER in Danville, Ill. is divided into five zones, each served by its own heating-cooling package

Dealer Prescribes Zone Air Conditioning



INSTALLATION OF a cooling unit beside gas fired furnace completes the package for one zone



RETURN AIR plenum nears completion. Both round and rectangular return air ducts are used



HFRB DREWS (right) and son check the air vane of the perimeter diffuser

for Medical Center

. . . for year 'round comfort in a modern building. This dealer's treatment suggests a new market for warm air heating dealers



ROUND FEEDER DUCT takeoffs from extended plenum supply first floor baseboard diffusers

CONTEMPORARY design for commercial buildings promotes wider use of large glass areas. One type of building which has recently used this feature extensively is the medical center found in small cities or in outlying sections of large metropolitan communities. Such a building is the Logan Avenue Medical Center in Danville, Ill. The people who work in this building and their patients are kept comfortable by year 'round air conditioning systems installed by Herb Drews, Danville's largest warm air heating dealer.

The building is divided into five zones, each containing its own combination heating and cooling package. Zone 1 consists of two doctors' suites in the one-story north wing. The larger suite is comprised of a reception room, receptionist's cubicle, three examination rooms, three doctors' consultation rooms and a combination toilet-supply room. In the smaller suite are reception room, receptionist's cubicle, two examination rooms, two doctors' consultation rooms and a combination toilet-supply room.

Heat for Crawl Space

Zone 2 (the south wing) uses the same floor plan. Both zones are located over a crawl space with the supply and return ducts located beneath the floor joist. Near the middle of each wing is a utility room where the heating and cooling packages are located. The utility room floor is a concrete slab poured level with the tamped earth of

". . . commercial applications of this type are typical of those most warm air heating dealers are set up to handle"

the crawl space. The side walls of the utility room extend from the first floor level to the ceiling, leaving the area below the first floor open to the crawl space. The advantage of this arrangement is that it furnishes the heat normally lost from the furnace (through its sides) to the crawl space. For this reason, no air is discharged directly into the crawl space.

Air for the system is distributed through an extended plenum from which 4 and 5 in. round ducts conduct the conditioned air to the diffuser in the baseboard at the perimeter of the building. The return air uses panned joist space wherever possible and then empties into a common collector duct. Also connected to this return air system is a 14×8 in. outside air intake for making up air lost at the door and to provide ventilation for this type of installation.

Heating the Examination Rooms

An interesting feature of the air distribution system is the location of supply outlets in the small examination rooms, even though they contain no outside wall exposure. These outlets assure sufficient heat during cold weather when patients are undressed for the physician's examination. All doors normally kept closed contain door grilles.

All supply ducts are insulated with 1 in. thick blanket insulation.

Zones 3 and 4 are similar in design and are formed by dividing the two-story main building in half, with the entrance hall acting as the vertical divider. All rooms in the basement and first floor north of the entrance hall and stair well are in Zone 3. The south sides of the basement, first floor and the entrance hall form Zone 4.

The first floor of the main building is divided into suites similar in character and purpose to those in the north and south wings. The basement contains service rooms, a coffee lounge, a pharmacy, two lavatories, two storage rooms and two doctors' suites. The two equipment rooms contain heating and cooling equipment, water cooling towers, water heaters and other service machinery. Thus, the heating and cooling requirements for the basement are not as great as those of the other floors, but are just as important because the rooms are occupied throughout the day.

Future Expansion Provided For

The air distribution for the first floor is through round ducts supplying diffusers located around the perimeter of the building. The basement air is supplied from an extended plenum system from each combination unit through round ducts to diffusers in the ceiling of each room, regardless of its use. The planning behind this distribution is to make the storage rooms available as rentable space or to fill expansion requirements which may arise at a later date.

Zone 5 is made up of the entire second floor which contains three suites. One suite is comprised of four large rooms and two lavatories. The other two suites are made up of two large rooms each and individual lavatories. The equipment room containing the heating and cooling units make up the remainder of Zone 5. The air distribution for this zone is through an extended plenum located in the dropped ceiling of the first floor hall and feeding to connecting plenums located adjacent to the first floor partition walls. Round feeder ducts pull off the extended plenum to supply diffusers located in the baseboard along the perimeter of the second floor.

The return air is removed from the room through ceiling outlets connected to round ducts which in turn connect directly to a raised return plenum projecting above the second floor ceiling level. All ductwork located above the second floor ceiling is covered with 1 in. insulation. ty

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Water for each of the five summer cooling units is supplied by individual cooling towers in each equipment room. Air is brought in through screened louvers to a duct system which delivers the air to the tower. The moisture-laden, heated air from the cooling tower is discharged to the outside through a wall opening as far from the intake grille as is practical. This arrangement aids in reducing the possibility of recirculating the moisture-laden air.

"Commercial applications of this type are typical of those most warm air heating dealers are set up to handle," says Herb Drews. "The biggest obstacle to overcome is in getting the architects to write the specifications around zone control by the use of small cooling packages and furnaces. In general, architects have been trained to think of steam or hot water systems when considering any applications other than residences. Once I've shown an architect how well commercial buildings of this size are served by this type of equipment, he will call up to ask about other applications. In our small city of Danville I can show him supermarkets, television studios, plant office buildings, research laboratories and many other commercial installations which we have provided with year 'round air conditioning equipment that meets every requirement of the application."

Laying Out a Round Cornered Transforming Hood

... for application under circumstances in which proper disposal of contaminated air necessitates locating the hood in a position where sharp corners present a safety hazard

This month's pattern problem deals with the layout of a suction hood exhaust such as the one shown over a quench tank in Fig. 1. The same hood could be applied over an industrial furnace to remove heat, or over a blacksmith forge to remove smoke. Suction hoods for this type of exhaust must be kept as close to the point of air contamination as possible so the smoke or fumes will be captured at the point of origin, preventing pollution of the surrounding air and the resulting discomfort to the workmen. In many instances, the necessity for keeping the hood close to the point of air contamination requires installation of the hood at a height less than 6 ft from the floor.

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In the design of a low elevation hood, it is good safety practice to eliminate sharp corners above the working area.

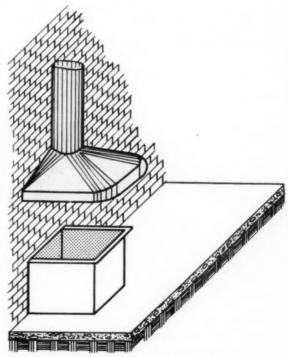
In analyzing the pattern problem for the exhaust hood, it will be noted from Fig. 2 that the hood is symmetrical about the horizontal center line, and from Fig. 3 that the round top is offset from the base. Also, it will be noted that the transforming section is $1\frac{1}{2}$ in. long. From this analysis it is concluded that the patterns can be developed from a half plan view and a $1\frac{1}{2}$ in. height line

The following is a step-by-step solution to the pattern problem:

Simplified Method Drawing, Fig. 4-

a) Draw a right angle and mark the intersection point of the lines with the letter B. From point B, measure 2 in. to the left on the horizontal line and establish the point C. From point B, measure 1 in. on the vertical line and establish the point A. Through point A, draw a line perpendicular to line A-B and mark this CL for the center line.

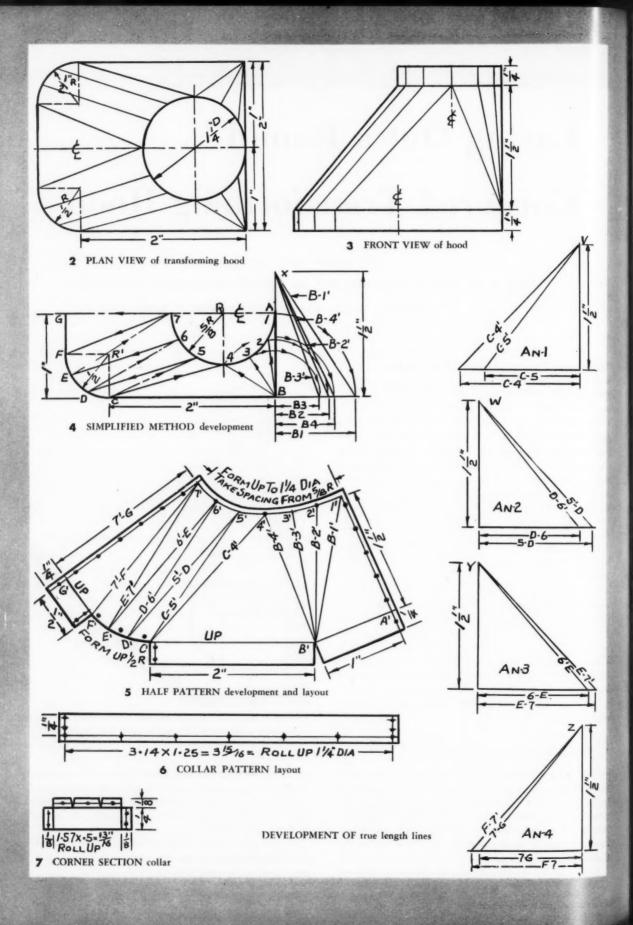
b) To the left of point A, measure the given radius of



1 EXHAUST HOOD placed directly over a quench tank should have rounded corners because of its location

the round opening which is $\frac{5}{8}$ in. and mark the point R. With R as center and radius $\frac{5}{8}$ in. draw a half circle below the line extending to the left of point A. Divide the half circle into six equal spaces and number the points 1, 2, 3, 4, 5, 6 and 7.

c) Through point C on the horizontal line B-C, draw a line perpendicular to line B-C and parallel to line A-B, and ½ in. above point C on this line, establish point R'.



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With this point as center and given radius ½ in., draw the 90 deg arc C-F to the left and establish point F at the end of this 90 deg arc. Draw line F-G, which is perpendicular to the center line, to intersect the arc.

d) Divide the 90 deg arc C-F into three equal spaces and letter the intermediate points E and D. From point B, draw the work lines B-4, B-3, B-2 and B-1. From point C, draw lines C-4, C-5, 5-D, D-6, 6-E, E-7 and 7-F.

e) Extend the line C-B to the right of point B and the line A-B above point A. From point B, measure the given vertical height as shown on Fig. 3 which is 1½ in., and mark the point X. With point B as center and radii B-1, B-2, B-3 and B-4, draw arcs to intersect the extended line C-B. Draw lines from the intersection points to point X and mark the line B-1', B-2', B-3' and B-4'.

f) Extend a vertical line above point F. From point 7 on the center line, draw a line to the left and parallel to line C-B until it intersects the vertical line extending from point F. Mark this intersection point G.

To Lay Out the Pattern, Fig. 5-

a) Draw four right angles for developing the true length lines. These are indicated on the master drawing as AN-1, AN-2, AN-3 and AN-4. On the vertical legs of each, measure the given transformer section height which is 1½ in. and mark the points V, W, Y and Z.

b) Draw a 2 in. horizontal line and mark the right end with the symbol B' and the left end with the symbol C'. On Fig. 4, measure the developed line B-4' and with point B' (Fig. 5) as center, draw an arc above the line B'-C'. Transfer line C-4 from Fig. 4 to the horizontal leg of right angle AN-1 and draw the developed true length line C-4'. With C' (Fig. 5) as center and distance C-4' as radius, cut the arc B-4' and mark the point 4'.

c) Measure developed line B-3' (Fig. 4) and with B' (Fig. 5) as center, draw an arc to the right of 4'. Set a compass at chord length 4-3 on the $\frac{5}{8}$ in. half circle (Fig. 4) and with point 4' (Fig. 5) as center, cut the arc B-3', and mark the point 3'.

d) Set a compass at developed line length B-2' (Fig. 4) and with B' (Fig. 5) as center, draw an arc. With chord length 3-2 (Fig. 4) as radius, and point 3' (Fig. 5) as center, cut the arc B-2' and mark the point 2'.

e) With developed line B-1' (Fig. 4) as radius, and point B' (Fig. 5) as center, draw an arc. Measure chord length 2-1 (Fig. 4) and with point 2' (Fig. 5) as center, cut the arc B-1' and mark the point 1'.

f) With line B-X (Fig. 4) as radius, and point 1' (Fig. 5) as center, draw an arc to the right of point B'. With B-A (Fig. 4) as radius, and point B' (Fig. 5) as center, cut the arc B-X and mark the point A'.

g) Transfer line C-5 from Fig. 4 to the horizontal leg of the right angle AN-1 and draw the hypotenuse line C-5'. With point C' (Fig. 5) as center, and radius C-5' draw an arc to the left of point 4'. Measure chord 4-5 (Fig. 4) and with point 4' (Fig. 5) as center, cut the arc C-5' and mark the point 5'.

h) Line 5-D is transferred from Fig. 4 to the horizontal

leg of right angle AN-2, and hypotenuse line 5'-D is the developed line. With point 5' (Fig. 5) as center and distance 5'-D as radius, draw an arc. Measure chord length C-D (Fig. 4) and with point C' (Fig. 5) as center, cut the arc 5'-D and mark the point D'.

i) Line D-6 (Fig. 4) is transferred to the horizontal line of right angle AN-2, and the hypotenuse line D-6' is the developed line. With distance D-6' as radius and point D' (Fig. 5) as center, draw an arc. With chord length 5-6 (Fig. 4) as radius and point 5' (Fig. 5) as center, cut the arc D-6' and mark the point 6'.

j) Transfer line 6-E to the horizontal line of right angle AN-3. Set a compass at developed line length 6'-E and with point 6' (Fig. 5) as center, draw an arc. With chord length D-E (Fig. 4) as radius and point D' (Fig. 5) as center, cut the arc 6'-E and mark the point E'.

k) Line E-7 (Fig. 4) is transferred to the horizontal leg of right angle AN-3. Developed hypotenuse line E-7' is the radius. With point E' (Fig. 5) as center and distance E-7' as radius, draw an arc. With chord length 6-7 (Fig. 4) as radius and point 6' (Fig. 5) as center, cut the arc E-7', and mark the point 7'.

1) Measure line 7-F (Fig. 4) and transfer this length to the horizontal leg of right angle AN-4. Draw the hypotenuse line F-7'. With this distance as radius, and point 7' (Fig. 5) as center, draw an arc. Measure chord E-F on the ½ in. radius (Fig. 4) and with point E' (Fig. 5) as center, cut the arc 7'-F and mark the point F'.

m) The line 7-G (Fig. 4) is transferred to the horizontal leg of right angle AN-4. The hypotenuse line 7'-G is the developed line. With point 7' (Fig. 5) as center and distance 7'-G as radius, draw an arc. Set a compass at line length F-G (Fig. 4) and with point F' (Fig. 5) as center, cut the arc 7'-G and mark the point G'. From point A' (Fig. 5) draw a $\frac{1}{4} \times 1$ in. flange rectangle with the long side parallel to line B'-A'. From point B', draw a $\frac{1}{4} \times 2$ in. flange rectangle with the long side parallel to line C'-B'. From point F' draw a $\frac{1}{4} \times \frac{1}{2}$ in. flange rectangle with the long side parallel to line F'-G'.

Through the developed lines draw the work lines and the pattern outline.

The Collar Pattern, Fig. 6-

a) Calculate the collar circumference by multiplying the given diameter by the constant 3.14. Thus, 1.25 \times 3.14 equals 3.92 or 3 15/16 in.

b) Draw a rectangle with sides equal to collar circumference and the given length, or $3 \cdot 15/16$ in. $\times \frac{1}{4}$ in.

The Round Corner Patterns, Fig. 7-

a) Calculate the length of the $\frac{1}{2}$ radius corner section by multiplying the given radius by the constant 1.57. Thus, $1.57 \times .5$ equals .785 or 13/16 in.

b) Draw a rectangle equal to the developed radius by the flange length which is $13/16 \times \frac{1}{4}$ in.

Add allowances for seams and joints, lay out the rivet holes and mark the patterns for fabrication.

Dealer Volume Grows

in Greenhouse Market

... as horticulturists find warm air heating systems are capable of producing the ideal environment needed for fragile plants

By Art Theobald Chief Engineer Sequoia Mfg. Co.

SALES ACTIVITIES of some California dealers have expanded the application of forced warm air heating systems into the interesting field of horticulture. The heating systems installed in the greenhouses have shown the operators many positive advantages through better quality and larger quantities of flowers from the same beds used prior to the installation of the warm air heating systems.

The growing of flowers is a big business — a business where big profits can be made quickly or heavy losses sustained just as fast by the greenhouse operator. Suc-

cess depends on a flower grower's ability to anticipate the market and produce a superior quality product. Necessity for predicting the market encourages growers to investigate any potentially beneficial aid, which of course includes a modern warm air heating system. the

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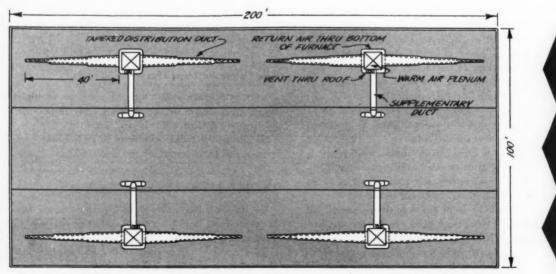
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The size and arrangement of the greenhouse, type of crop to be grown and outside temperatures must be taken into consideration when designing a warm air heating system. Basically, however, the method worked out by a successful dealer who has engineered and installed a number of these systems in the past two years calls for two or more 200,000 Btu furnaces set on concrete blocks 24 in. high and located strategically throughout the greenhouses.

The accompanying floor plan and photographs of a typical installation show four furnaces located in a 100×200 ft greenhouse. Standard runs of round warm air



FOUR FURNACES and individual tapered duct systems solve the problems of temperature and air volume control for a large greenhouse

ducts 16 in. in diameter at the furnace taper in steps to 4 in. Three in. outlet holes on 18 in. centers extend the length of the supply line. Eight such runs — two to each furnace and 40 ft long — heat the two outside gables or growing areas. The center area is heated by non-tapered round ducts with tee discharge outlets.

Installation and Operating Costs are Less

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Savings on this installation, when compared with other forms of heating, were substantial according to James Wallace, South City Sheet Metal Works, San Francisco, who made the installation. The system cost approximately \$3000 completely installed, whereas other types of heating systems were bid around \$5000. Operational costs have proved particularly economical. We are told the grower found his fuel bill for the first 12 months totaled \$405.63—far below the operating cost of the wet heat system replaced by the warm air systems used here.

The favorable operational cost illustrates one of the major sales appeals of warm air heating systems to flower growers. Establishing each greenhouse as an independent heating system through a standard thermostat offers a much greater advantage to the grower than is apparent to the average warm air heating dealer, because during the annual growing cycle for any greenhousegrown crop there are several times when it must lie fallow. Another advantage is the selectivity of temperatures for different crops, since some plants grow best at 65F while others require a mean temperature of only 58F. Not to be overlooked is the frequent opportunity to induce forced-growth with a temporarily higher temperature setting. Such an operation often permits the greenhouse operator to capitalize on a favorable market. Day-to-day temperature variations are easily accomplished with the warm air heating system.

Flowers of Higher Quality Obtained

With any heating system there will be periods of shut-down for maintenance or repairs. The advantage of a multiple warm air system such as used here is that it permits periodic cleaning, inspection and adjustment without sacrificing the building's temperature balance.

We are informed by one of the most prominent Northern California growers — in whose greenhouses the accompanying photographs were taken — there has been a marked improvement in his crop-raising with a resulting increase in profits. As an example, he cited growing carnation plants to a height of 66 in. in just 11 weeks — acclaimed by horticulturists as a phenomenal growth rate. Nearly constant level of air circulation and temperature maintained by the warm air system was pointed out as one of the most probable contributions to the rapid growth. Another point was the noticeable reduction in the formation of fungus and mildew. The grower estimated he was experiencing 75 percent fewer plant casualties with the forced warm air system than when the wet heat system was employed.

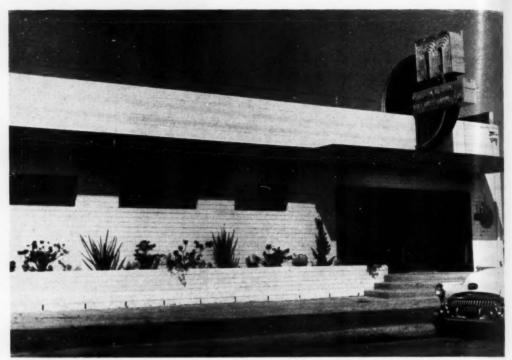


ONE OF FOUR furnace and duct systems located in a three-gabled greenhouse. The round ducts are tapered from 16 to 4 in. with plenty of space for installation



EFFECTIVENESS of the discharge air outlets is pointed out by dealer James Wallace (right) to greenhouse owner Peter Mazzanti

Less condensation on the greenhouse windows with a proportionate increase in the amount of natural light admitted contributed to the increased quality of the flowers produced. These are powerful sales arguments for warm air heating dealers looking for another market.



MAXIMUM EFFICIENCY keynotes handsome building of Modern Heating and Air Conditioning Co.

Housing Projects —

A Fertile Air Conditioning

How one warm air heating dealer built his dollar volume to 10 percent of annual sales in two cooling seasons with plans that should result in even larger percentages in the years to come Capitalizing on the "look to the future" trend sponsored by the rapid growth of air conditioning, many dealers and contractors are gearing their operations to the prediction that air cooling eventually will be a basic ingredient in most housing projects. Warm air heating dealers, realizing the field is made to order for their particular type of operation, are drawing on their familiarity with duct sizing and engineering problems to include air conditioning as a large part of their business.

A case in point is the progressive Modern Heating and Air Conditioning Co., Culver City, Calif. Formerly Modern Heating Co. of Los Angeles, the company changed its name and location in 1954 and is now equipped to share in the rising potential of the field.

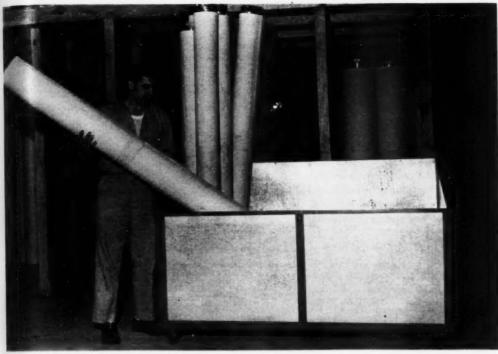
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PARTNER IRWIN MINK selects round duct from orderly arrangement of parts and equipment

By Robert Welch

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ing for residential tracts was practically unheard of in southern California," recalls partner Mort Cousens. "Today it is standard equipment except for a few low cost houses. Air conditioning will undoubtedly go through a similar period of growth, though of course it is impossible to guess the time schedule."

A Wide Open Field

Another partner, Ernie Phillips, is convinced that eventually refrigerated air conditioning will be found in all houses selling at \$10,000. Six years ago the company handled no air conditioning; it is now running about 10 percent of total volume and is expected to increase steadily.

Of course the owners are talking about the mass market which is just now beginning to take shape. Many



YEAR 'ROUND COMBINATION is set up by Mort Cousens (left) and Ernie Phillips for showroom display

AMERICAN ARTISAN, FEBRUARY 1955

heating dealers have made commercial installations for years and continue to do so. Future growth must necessarily be in residential construction. Manufacturers are rendering assistance by developing more efficient and reasonably priced units. They are also pre-selling the public on the idea of air conditioning.

Promotion Efforts Pay Off

Last spring Modern Heating and Air Conditioning Co. took its first promotional step in the new field when they installed the heating and cooling systems in a remodeled house display sponsored by the Remodeling Contractors Association at a home show. The display demonstrated what can be done with residences designed long before the advent of today's equipment, and was a big attraction for visitors, drawing valuable publicity.

The firm also made an appeal for the business of speculative builders by sending a mailing piece to approximately 5000 contractors who subscribe to a local construction paper. More than 100 reply cards and telephone calls were received.

The first sizable job growing out of these inquiries is now underway in the San Fernando Valley north of Los Angeles. Although the valley is considerably warmer than the metropolitan area, builders had not previously offered refrigerated cooling systems.

Corbin Palms, the first housing project to incorporate refrigerated air conditioning, consists of 104 houses with provision for an eventual 700. Priced at approximately \$16,000, the houses are of open beam construction, adding to the difficulty of duct installation. Since original plans called for forced warm air heating, the only structural change necessary when the company was asked to bid on air conditioning was to provide about 4 sq ft additional space for the unit.

The builder is paying approximately \$1250 for a three ton water cooled unit including a cooling tower in the back yard and a recirculating pump. Duct sizes were increased 10 percent and insulated with an inch of fiber glass. There was no extra cost involved in the air distribution system.

Heating and cooling units are placed side by side in a centrally located closet. Each has its own blower, with a common plenum. Thus, the installation is compact and easy to service. It gives the builders an important merchandising advantage and will probably induce other developers to follow suit.

An alternative method which Modern Heating and Air Conditioning Co. encourages is for builders to offer cooling as an optional extra. Purchasers may either buy air conditioning with their home or add it later. The small amount of space needed for the unit can be used as a closet until the owner decides to proceed with the installation. A couple of project builders who have used this method find it represents only a slight increase in cost, yet is an effective selling point.

Although air conditioning now represents only a small portion of its total business, the company is in position

to handle it in large volume because of techniques developed for project heating installations.

Efficient Cost Controls Exercised

This company has been successful in the highly competitive housing project field because of exact knowledge of costs and how to control them. Adequate supervision is one of the most important factors. On every project there is a working foreman who is directly responsible for production. To make sure that all problems are quickly ironed out, one of the owners visits each project three times a week, checking on work schedules and serving as liaison with other crafts.

Foremen receive a master plot plan showing every lot and the house assigned to it. They also have complete layouts and materials lists for each floor plan. Every night the foremen call in to report houses ready for inspection, giving the management a further check on progress. Work is divided into several phases: roof flashing, rough-in, register installation, setting the furnace, installing thermostat, hooking up the unit, lighting the furnace, air conditioner installation, balancing and checking out.

Standard costs have been established for every operation. Comparing the weekly payroll with completion reports quickly determines whether their labor expense is in line. When there is obviously something wrong, the foreman responsible is advised of the circumstance and allowed to use his delegated authority to correct it in his own fashion.

As with labor, the cost of materials is closely controlled. The materials list includes every item down to the last sheet metal screw, and the entire shipment, even for a project of several hundred houses, goes out at one time. On the job site it is stockpiled in a compound area. When space is not available a nearby building is rented to store warehouse materials.

Small and breakable items such as elbows are supplied with a 10 percent overage allowance. So close is this computation that on a recent tract of 356 houses only \$100 in materials was returned to the shop.

Of course it takes planning to utilize controls of this nature. The first step involves careful takeoff, which is checked against experience on the model homes. Figures are again adjusted after 10 houses have been completed to make sure labor and materials cost is accurate.

A Streamlined Operation

The company's new building is not as large as the scope of their activities would seem to require; since much of the volume is represented by projects for which warehousing is separate, most of the equipment carried at headquarters is for individual installations and service.

The building is situated on a 50×200 ft lot, with 5000 sq ft under roof. Showroom and offices are altractive with acoustically treated ceilings, but the ap-

(This article continued on page 109)



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Why is LENNOX

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- Nation-wide branch office engineering service that places the finest heating and air conditioning technicians at your disposal—whenever and wher-
 - Largest consistent advertising program . . . tells your prospects about your products . . . helps establish you as the leading dealer locally.

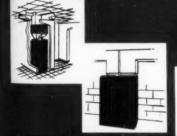


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Cash in on the big "boom" in home cooling... the greatest profit opportunity to come your way in many years! Lennox is America's most complete line—with practical, "priced-right" cooling systems for every home need. Some models can be used with forced air heating systems to provide all-through-the-house cooling at savings up to 50%. And every model—regardless of style or size—gives you top cooling efficiency, more value per dollar, greater sales appeal. Get ready now for cool profits with the Lennox line.

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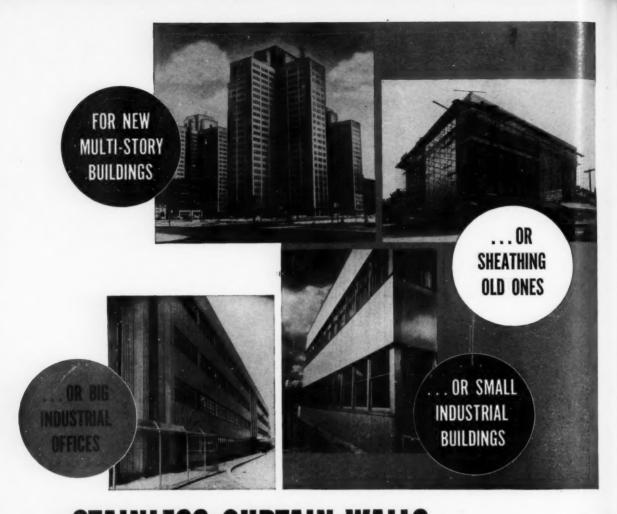
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STAINLESS CURTAIN WALLS give you the best "long pull" investment

"INFO" for Architects and Builders

- "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
- 2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details
Address Dept. AA-62

Curtain wall panels faced with Allegheny Metal have all the advantages. They can give your building the truly modern look. They have a soft, highly attractive luster and permit wide latitude in design for individual appearance. They're light and strong . . . can be used for sheathing or "face-lifting" operations on existing structures, as well as for any type or size of new commercial building or institution.

Compared to brick or masonry construction, stainless curtain walls present savings at every turn: in lighter foundations; in enlarged floor space; in fast all-weather erection; in reduced maintenance, easy cleaning and freedom from painting. And—compared to any other curtain wall facing material—stainless steel is the hardest, strongest and most resistant to smoke, fumes, weather, wear, etc. It is the one material that can best take a beating . . . that costs the least in the long run because it lasts the longest.

Our Engineering and Research Staffs, etc., are at your service—anywhere, anytime. • Let us work with you. Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

Make it BETTER- and LONGER LASTING
with Allegheny Metal

Warehouse stocks carried by all Ryerson steel plants



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Dealer Prepares for Housing Project Market

(Continued from page 104)

proach is functional rather than flamboyant.

In the shop section, lateral steel beams supporting the roof allow a working area free of columns or posts. Sixwheeled carts simplify order assembly.

The warehouse is laid out in a "U" pattern with stock stored on two sides and assembled orders on the third side. Taking one of the carts, a man starts at the back door and works around the perimeter of the shop, picking up whatever supplies the job calls for. Reaching the other leg of the "U", he deposits supplies for that job in a compartmentalized section where it is kept separate until ordered out. Standard materials, such as air screens, plate straps and joint tape, are stocked between the assembled order area and an inclined ramp leading to the loading dock. When the order goes out it is again placed in a cart and standard supplies are added. Loading from carts to trucks is a simple procedure.

Since inventories are carried at the building site, warehouse stock is necessary only for individual jobs. Thus there's enough space available for the management to take advantage of exceptional buying opportunities. The central section of the shop is occupied by equipment used in fabrication of special fittings. Looking into the future of heating and air conditioning, the company feels the service contract business and replacement market have good potentials for continued growth and steps are being taken to develop this phase of the operation.

Already \$2500 has been spent to set up a card control system for service contract customers. Henceforth whenever the original one year service guarantee is about to expire on an installation, the control system will reveal this information and a mailing piece is automatically sent to the customer inviting him to sign a contract. The cards will supply a permanent record of work performed at every address.

The city will be divided into service zones, with boundaries established according to the number of homes in each section. Routes will be established for off-season servicing to eliminate emergency calls during cold weather.

The firm presently operates two full time service trucks, each equipped with a 100 percent inventory of controls, motor belts, filters, thermostats, etc. valued at \$1000. Truck inventory is replenished each night from regular stock.

Larger Houses Constructed in 1954

Two the the new nonfarm one-family houses started during the first quarter of 1954 had three bedrooms or more, according to results of a survey conducted by the U.S. Labor Department's Bureau of Labor Statistics.

Showing 1140 sq ft as the average floor area for the new nonfarm units, the survey results support other indications that the 1954 house was larger than houses built in preceding years. Comparisons with data from an earlier study by the bureau in 15 metropolitan areas suggest that the 1954 house was about five percent larger on the average than houses built in 1951.

The sample survey covered approximately 5000 residential building projects which included more than 30,000 dwelling units on which work was started during the first quarter of the year.

The median proposed selling price of the one-family houses started was \$12,300. In metropolitan areas, where more than three-fourths of the nonfarm units were being built, the median intended selling price was \$12,900, as compared with \$10,100 for houses in nonmetropolitan areas. In the United States as a whole, one-fourth of the houses started were priced to sell below \$10,000; one-tenth were intended for the high price markets above \$20,000.

Basements were missing from almost 60 percent of the houses covered in the survey. Basementless houses were particularly popular in the South and West. In those areas only 20 percent of the houses were being built with a full basement. In the North, however, the proportions were reversed — more than 60 percent of the new dwellings had full basements; approximately 20 percent were without basements, and the remainder had partial basements.

Frame construction predominated in the construction of one-family houses throughout the four major regions of the country. In the nation as a whole, 82 percent of the new homes were of frame construction. Approximately two-fifths of these units had wood facing; one-fourth had brick facing. In the North, asbestos shingle facing was as popular as wood facing. These two types of facing on frame wall construction were used in more than two-thirds of the new houses under construction in that region. In the West, stucco facing on frame construction was the most prevalent, being used on about half of the new one-family units sampled in the survey.

The information on characteristics of the new construction was obtained by the bureau through direct personal interview with the builder, owner or other individuals connected with each project, supplemented by the bureau agent's own evaluation.

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1955

New AIRTEMP

"Spacesaver" combination reduces installation of heating plus cooling to its Simplest Terms!

COMPACT FUNCTIONAL DESIGN

Smart modern styling— minimum of floor space re-quired, as little as 21" x 29".

FACTORY ASSEMBLED

Factory-tested and completely assembled—wired and burner in place.

Easier installation in tight quarters.

MATCHING COIL FOR SUMMER COOLING

FOR SUMMER COOLING
Inverted "V" cooling coil
(optional) creates the
"Spacesaver" combination for Yearound Air
Conditioning with simple addition of waterless
or water-cooled condensing unit ing unit.

FRONT FLUE OUTLET

Models easily converted from gas to oil or oil to gas—with no loss in capac-ity. Models carry Under-writers Laboratories, Inc.,

FULL CHOICE OF CAPACITIES

67,000-210,000 BTUs output per hour. Five gas and five oil models for closets (HiBoys) and base-ments (LoBoys).

EASILY CONVERTIBLE

and American Gas Asso ciation approvals.

DRAFT DIVERTER Enclosed horizontal-to-vertical outlet type. Pre-vents down drafts from extinguishing pilot flame or affecting operation of

> ENCLOSED AUTOMATIC CONTROLS

All controls and burner

completely enclosed— safer, protected from tam-pering. No dirt-catching

DIAPHRAGM VALVES Quiet-opening diaphragm valves. Self energizing gas controls. No outside source of power required.

DYNAMICALLY BALANCED OVERSIZE BLOWER

Full rubber mounted for

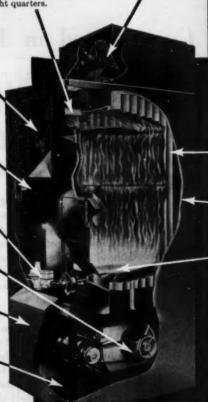
extreme quietness. Adjust-BONDERIZED JACKET

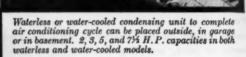
Bonderized to resist rust. Finished with oven-baked

Harmony gray spatter

EFFICIENT FILTERS Oversize filters included as standard equipment. Bot-tom filter frame built-in, side filter frames available.

pering. No projections.





CORRUGATED HEAT EXCHANGER

BASEMENT "SPACESAVER

CLOSET "SPACESAVER"

More heating surface in less space. Highest efficiency heat transfer and greater strength. No contraction or expansion noise. So durable it's warranted for ten years!

IMPROVED INSULATION

Glass fiber, faced with aluminum foil, assures low jacket temperatures.

SINGLE PORT BURNER

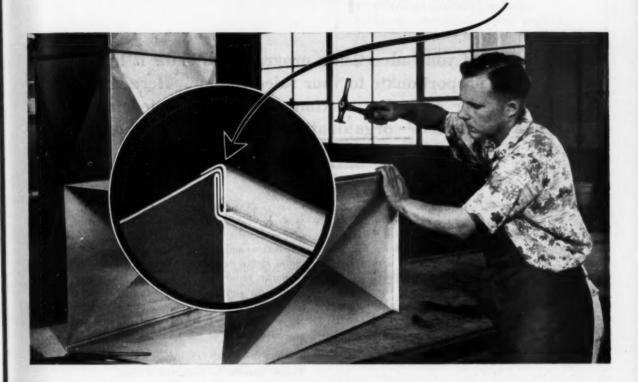
Easily serviced. Never needs cleaning.

Write for complete details of today's most profitable heating franchise ...



AIR CONDITIONING FOR HOMES, BUSINESS AND INDUSTRY HEATING

Kaiser Aluminum utility sheet takes perfect Pittsburgh lock seam!



The desirable forming qualities and great strength of Kaiser Aluminum Utility Sheet mean that it will take and hold a perfect Pittsburgh Lock Seam—and by the same methods employed for galvanized.

And your metal cost is lower because the equivalent weight of aluminum covers three times as much area as galvanized. You save metal and fabrication time because aluminum's efficiency permits substantially smaller ducts. No waste from edge shearing or trimming.

Saves 10 to 12 per cent in installed cost because lightweight aluminum permits faster handling and erection, lighter supports. No insulation is needed.

Delivers much more heat than bare galvanized or asbestos paper-covered ducts. And Kaiser Aluminum Utility Sheet will stand up for years, with no red rusting, no coatings to crack or peel.

For complete information, contact the Kaiser Aluminum sales office listed in your telephone directory, or one of our distributors. Kaiser Aluminum & Chemical Sales, Inc. General Sales Office, Palmolive Bldg., Chicago 11, Ill.; Executive Office, Kaiser Bldg., Oakland 12, California.

Kaiser Aluminum

The low cost, efficient metal for sheet metal work

Important information about gauge sizes! The Brown & Sharpe gauge used for aluminum is two numbers higher than the Standard gauge used for galvanized. Thus, for example, 18 ga. aluminum and 20 ga. galvanized are the same thickness (.040").

Send coupon for free folder. Helps you take full advantage of aluminum's unique combination of properties. Availability charts on Kaiser Aluminum Utility Sheet in both flattened and coiled sheets, including thicknesses, weights, etc. Also contains weight and coverage comparisons for aluminum and galvanized. Mail coupon today!

	c Chemical Sales, Inc. ng, Oakland 12, California
Please send "Kaiser Aluminum Name	
Address	
Company	
City and State	

AMERICAN ARTISAN, FEBRUARY 1955

1955

111

Planned Merchandising

Basic Sales Tonic

Analysis of your advertising program will show it to be directly proportionate to your sales volume. Here are a few tips for achieving maximum results, selected from talks to dealers' organizations by Artisan's editor

An extremely important step in forming a merchandising program is to decide upon the extent to which advertising will be used. The president of one of the larger furnace companies once said, "Doing business without advertising is like winking at a girl in the dark — you know what you are doing but no one else does!"

Appropriately, we turn to this important aspect of the dealer's merchandising program, having considered window displays and letterheads in November 1954 American Artisan.

Advertising can be divided into two categories — permanent and temporary. Examples of permanent advertising are the signs that hang in front of stores or the neon lights that carry a company's name after dark. These methods of reminding the public of your services are two of the most effective tools of advertising. Another permanent advertisement is the truck sign. Here are a few simple rules for truck advertising that have proven themselves in the sheet metal field: 1) Make your message brief; 2) make it large enough to be easily read; and 3) keep the truck and the sign clean.

In the flash of an eye a truck is past the observer. If the sign is too wordy and lettering is too small, the meaning is lost in the rush of traffic. If an advertising story is to be put across, it must be brief and large enough to be caught at a fleeting glance. The average sheet metal contractor has a real problem in saying all he would like to say to all the people he would like to reach. In order to do any volume of daily business he must be involved in a great variety of work varying from air conditioning installations and heating jobs to roofing and the fabricating of special equipment. However, the dealer who does primarily residential work would accomplish more in putting his story across by selecting a single item to feature on his sign — attic fans, stainless steel hoods, etc. — rather than using the words 'sheet metal,' or other general terms,

Truck Should be Colorful, Clean

The prevailing color of truck bodies in the sheet metal field seems to be red, which catches the eye, but seems to be so prevalent as to lack originality. Dark greens and blacks are next in popularity, though many people would say these colors fall short in advertising punch. Orange and yellow are effective as eye catchers, and in combination with black or blue they sparkle and have originality.

It is extremely important that the truck be kept clean because people who see it and don't know the firm are going to form a quick opinion and judge the company's work by what they see. It is obvious that a clean truck with a well-lettered sign carries a far greater sales punch than a dirty truck with a poorly-designed sign.

Another permanent type of advertising is the job site sign. The average person walking past a building where a truck is unloading or workmen are carrying material in or out says to himself, "I wonder what they are doing?" You may not only satisfy his curiosity but tell him about your business by putting up a job site sign that says, for example, "Another ventilating system being installed by Brown Sheet Metal Contractors."

The effectiveness of such methods of keeping your name in the public eye is amplified by its utility; the truck

Before Your Truck Goes Out -

Are truck and sign clean?

Is the message brief enough for quick comprehension?

Is the sign large enough to attract attention?

sign, because of its mobility may not require changing throughout the life of the truck; the building site sign is moved from job to job before its usefulness has a change to wear thin.

Temporary Ads Should Be Varied

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So much for the permanent type of advertising. Now let us consider the so-called temporary type. This is far from temporary, but gains its name from the fact that it needs to be changed periodically. There are many reasons for changing the style of your ads. They may be revised to suit the season, to give details on new products or models, to announce special sales events, to fit in with special local events and to take advantage of prevalent new expressions or quotations.

Advertising approaches vary with the individual firm. There are many sound approaches, including the hard wallop, the gentle touch, the suggestive lure, or just straight selling. Which one is used should depend on what the contractor or dealer feels are the characteristics of his potential customers.

In any case, each ad should reflect the firm's reputation for reliability. Advertising must be honest. You want your business to be known for its integrity. Don't let your advertising destroy this reputation by misrepresenting your product or your service, or by resorting to half-truths. Give people facts. You have a good product and a good service. Let people know about it. You don't have to be vague in your advertising, since you have nothing to hide. Speak out boldly, confident that the product and the service will sell themselves once you let people know about them.

People want to be informed. They want to know what your product and service will do for them and what it costs. Too many ads nowadays, printed and spoken, leave too many questions in the minds of the readers or the listeners and viewers. Don't leave any question unanswered in your advertising sales message. But on the other hand, don't clutter up copy with non-essentials. Say what you have to say in the fewest possible words.

This doesn't mean that your message should be presented in cold, black type in the newspapers, or in a monotonous monotone on the radio. Use every technique known to the advertising field to present your message in as attractive and interesting a form as possible. Strive for perfection in the layout of your ads, in the use of art work and color, and in your copy. Make every head-line and every line of copy sing. Dress ads up to the

ADVERTISING CHECK LIST

- 1. Change it periodically
- 2. Fit the approach to the market
- 3. Keep it honest; present only facts
- 4. Boil it down, but tell the story quickly
- 5. Utilize all available techniques
- 6. Convey confidence in your product
- 7. Consult trained advisors
- 8. Allow adequate expenditure
- 9. Strive for perfection
- 10. Back it up

best advantage typographically and give them a sparkling background.

It's Worth Doing Well!

Advertising is an art. If you are not an expert in the laying out of an advertisement, in writing copy for the printed piece or script for the radio, employ the services of one who is, whether he is in an advertising agency, is your own advertising manager, or is a representative of one of the media. Consult with any of these sources in the advertising field on planning an overall advertising program consistent with your objectives.

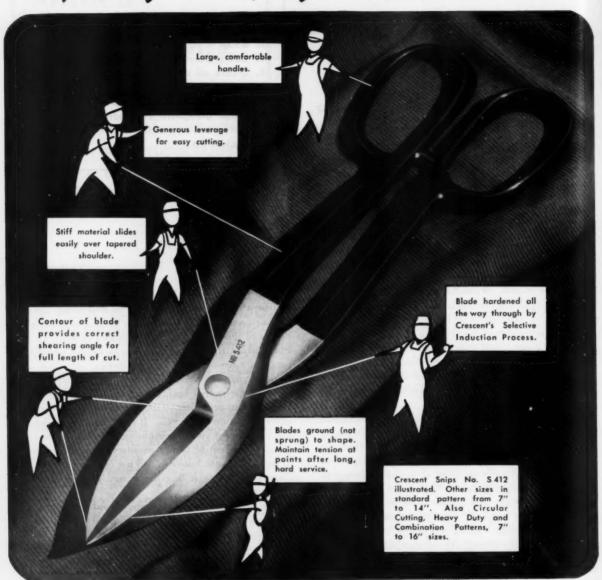
Make your advertising program just as important a part of your overall business activity as the hiring of a key salesman or an important executive. Don't consider advertising a necessary evil. It isn't. It's a very definite and vital part of your whole business picture. Therefore, spend an amount of money on advertising proportionate to the size of your business, and use every means at your disposal to see to it that the money is spent properly and most effectively.

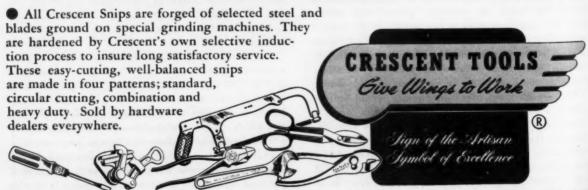
How much money should you spend on advertising and what methods would be best suited to your business? These are problems you must weigh individually. However, according to some recent surveys, many successful sheet metal contractors spend from 1 to 3 per cent of gross sales volume on advertising. The mean figure for the average contractor varies from $1\frac{1}{4}$ to $1\frac{1}{2}$ per cent. This same contractor conducts continuous advertising in his local newspaper — supplemented by direct mail pieces.

Direct mailings may be included (in the form of announcements, etc.) with monthly statements. In addition, they may be sent to other prospects. Prospect lists may be compiled from such sources as files of completed work, telephone and city directories, and mail order prospect lists which can be purchased from local agencies.

These are a few suggestions on how to get an advertising campaign started and how to guide it toward success. Those contractors who have used the methods described are most enthusiastic about what advertising is capable of doing.

Why Craftsmen prefer CRESCENT SNIPS





Crescent is our trade-mark, registered in the United States and obroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK

Here's How We're Warning Homebuyers...

SPREAD THIS WARNING

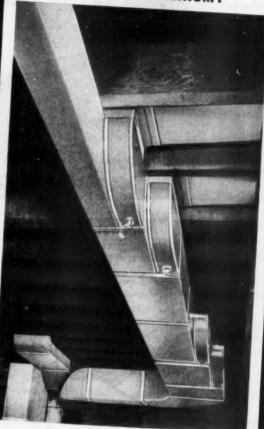
... it's good for your business!

Better than anybody, you know how fast the trend is to home air conditioning. People want homes either fully equipped or ready for conversion! And people should be warned about the dangers of rust!

That's what Reynolds is doing...in "Better Homes & Gardens," "Living for Young Homemakers" and "Small Homes Guide" and on the hit TV show "MR. PEEPERS." Reynolds is carrying the promotion to builders...in "House & Home," "Practical Builder," "American Builder."

Now it's in your interest to spread this warning. It builds more air conditioning business. It makes your work important. It guarantees customer satisfaction. Get behind this promotion. Recommend rustproof aluminum... Reynolds Aluminum. And identify your ductwork with the "Designed in Reynolds Aluminum" seal! Remember, aluminum is also lighter to handle, easier to work, with lowest heat emissivity and smoother surface to speed air flow. For more information, call the Reynolds Office listed under "Aluminum" in your classified directory or write Reynolds Metals Company, 2500 South Third Street, Louisville 1, Kentucky.

WARNING! WATCH YOUR DUCTS!
HOME AIR-CONDITIONING
MEANS MOISTURE CONDENSATION!
AVOID RUST DAMAGE...
INSIST ON RUSTPROOF DUCTS OF
REYNOLDS ALUMINUM!



Summer air cooling makes the difference—moisture condensing on cold ducts. Ordinary metal will rust. Replacement can mean tearing down walls! Whether you are installing air-conditioning in your present home, or buying, or building, insist on rustproof ducts of Reynolds Aluminum. Look for this Seal. Write for booklet! Reynolds Metals Company, General Sales Office, Louisville 1, Ky.

REYNOLDS 2



SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV

ALUMINUM



ELGEN SILENT DUCT

"JUST WHAT THE DOCTOR ORDERED"...that's what they're saying in shops all over the country. Elgen Silent Duct-machineassembled metal and material for flexible duct connectors -

- COSTS HALF as much as attaching material to metal yourself;
 - GIVES YOU choice of 24 or 26-gauge steel fastened to UL approved canvas (Govt. Spec MIL-D-10860), Johns-Manville asbestos, (wire-filled, if desired), or
 - U. S. Rubber neoprene-coated fibre glass; • ENGINEER-APPROVED...a stand
 - ard, top quality product ... same high, uniform strength from end to end;

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• COMES IN 100-foot (approx.) coils in handy dispenser carton...50-foot coils with asbestos also available.

ELGEN DAMPERSET



- ELGEN DAMPERSETS (licensed by Minneapolis-Honeywell) assure perfect damper control in blower and exhaust systems. What's more, they're
- A CINCH to assemble ... cut assembly time in half;
- PRECISION-MACHINED ... plus bronze self-oiling bushings;
- CADMIUM-PLATED for maximum life;
- ENGINEER-APPROVED ... easily adjusted ... self-aligning..."set 'em, forget 'em";
- PACKED as you wish...in single boxes or bulk 100's.

ELGEN ALL-TITE VANE RUNNERS



FOR SINGLE BLADES



- TERRIFIC TIME-SAVERS, All-Tite Vane Runners bring you the quickest, easiest method ever devised for making turning vanes for square elbows:
- · ABOLISH the need for punching, notching, riveting, spotwelding and layout;
- NO SPECIAL CHISELS or tools required...vanes lock in a jiffy with shears or hammer;
- TAKE YOUR CHOICE ... groove type for single blades...button type for single and double blades;
- DELIVERED in 8-foot lengths, 20 strips per bundle.



ORDER ELGEN PRODUCTS FROM YOUR JOBBER . . . AND WRITE US, Dept. A-2, FOR DESCRIPTIVE LITERATURE.

ELGEN MANUFACTURING CORPORATION

41-34 39th STREET, LONG ISLAND CITY 4, NEW YORK

Ohio Dealers Study Management Techniques

... at the first in a series of management clinics sponsored by National Heating Wholesalers Association



GEORGE H. FRACK discusses the importance of human relations in business operations

An important step in management instruction for heating dealers was taken as a joint effort of National Heating Wholesalers Association and Ohio State University when the first in a planned series of management courses was presented November 21-23 at the university campus in Columbus.

Formulated by the association as an aid to dealers in improving their operations, the first three-day session was conducted by William B. Logan, professor of distributive education, Ohio State University. He was assisted by members of the university faculty as well as by other authorities in the fields covered at the meeting.

Co-Sponsors Select Dealers

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Six Ohio wholesalers co-sponsored the first school, each selecting seven dealers to participate. Dealers' names were submitted to the national association which issued direct invitations. All 42 dealers or their representatives were reported to have attended. Costs were borne by the dealers themselves from a \$15 registration fee.

The program was drafted by the sponsors in consultation with Dr. Logan, who made a field trip before the school opened, accompanied by C. Stuart Rambo who was then executive secretary of NHWA. Heating dealers were interviewed, movies were taken and dealer problems were investigated in an effort to slant the course to the most pertinent problems faced by heating dealers.

The program opened Sunday, November 21 with registration and a buffet dinner. Business sessions were launched the following day with a welcoming address by Harold A. Fawcett, chairman of the department of education, OSU, and an orientation, Why Are You Here? by Mr. Rambo.

The first discussion, conducted by Elvin F. Donaldson, professor of business organization, OSU, was *Choosing the Correct Form of Organization*. The discussion treated sole proprietorship, general partnership, and the corporation.

John K. Pfahl, professor of business organization, OSU, discussed Looking at the Small Business. He treated financing the business, the balance sheet, capital planning and cost of capital, and financial operating statements. James R. McCoy, professor of accounting, OSU, con-

tinued the small business discussion with an address, Operating the Business at a Profit.

A Practical Solution

At this point, dealers were given plans of a modern home together with specifications which were broken down and discussed on the basis of cost, merchandise, labor and profit expected. Several "John Doe" job proposals were considered with all costs itemized.

Other class sessions were devoted to treatment of pertinent information by the following:

Roy V. Yelton, Title 1 representative of FHA, who discussed Customers Contract and Financing; Leonard Eckols, supervisor of underwriters department, Ohio industrial commission, who treated Proper Insurance for Heating Dealers; Warren Kennedy, special agent, American States Insurance, discussing Legal Liability Insurance; W. H. Witherspoon, state agent, Aetna Fire Group, who chose Physical Damage Insurance and Time Element Insurance; Lester J. Rausch, president, Bates & Co., discussing Surety and Fidelity Bonds.

Ohio State Sales Tax Rules and Regulations were discussed by J. A. Williams and Herbert Zerkel, both of the Ohio state sales tax division.

George H. Frack, supervisor of distributive education, Ohio Board of Education, presented *Human Relations* in *Business*.

Breaking down the general subject, Heating Dealers — Your Opportunity for Success, into two interesting presentations were J. S. Smith, vice president of Titus, Inc., discussing Accurate Records Can Insure Your Opportunity for Success; and James Remington, credit manager, Minneapolis-Honeywell Regulator Co., whose presentation was Meet John Doe — "Retired" Low Bidder.

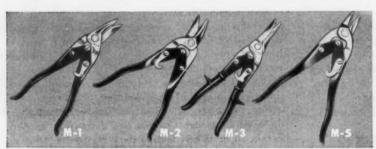
Co-sponsors for the first management school were Ohio Furnace Co., Inc., Palmer-Donavin Mfg. Co., F. O. Schoedinger, Inc., Squire Heating Supply Co., Vorys Bros., Inc., all of Columbus; and Earnshaw Sheet Metal Supply Co., Mansfield, O.

A second session of similar nature was reported to have been held February 14-15 in Columbus. A third class is scheduled for May, as the result of the enthusiastic response to the idea by Ohio dealers.

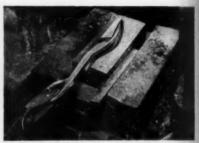
"WE FEATURE WISS SNIPS BECAUSE THEY SELL BEST WITH FEWER RETURNS"

Mr. A. P. Clement, buyer for Pidgeon-Thomas Iron Company, Memphis, Tennessee gives one big reason why his firm likes to feature Wiss metal cutting snips. There are several reasons why they are the choice of professional workers everywhere-why they sell better, with fewer returns. Wiss snips are

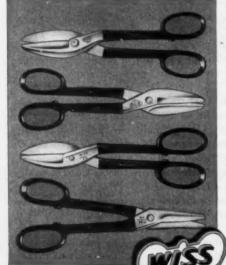
produced largely by the handwork of skilled workers. Each pair is rigidly tested and quaranteed perfect. Bolts are set precisely to reduce wear and to increase cutting power with the least effort.



WISS METAL MASTER SNIPS: Compound action design delivers amazing cutting power. These 10" snips cut with about one-half the effort required for standard 121/2" snips. One edge serrated to prevent slipping. M-1 (cuts left) and M-2 (cuts right) are designed to cut the most intricate scrolls and circles. M-3 is for shallow arcs and straight cutting. M-5 Bulldog Heavy Duty snips are tops for notching, nibbling and cutting shallow ares in sheet metal as heavy as 16 gauge.



Wiss inlaid blades are made of high carbon crucible steel welded to a hot drop-forged frame to provide the extra service demanded by professional workers.



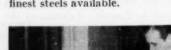
J. WISS & SONS CO.,

WISS INLAID SNIPS

High carbon crucible steel welded to a hot drop-forged frame provides that extra service demanded by professional users everywhere. Six Straight Cutting sizes from 11½" to 17", including Bulldog Snips for notching. Three Combination* Cutting sizes, 121/2", 131/2" and 141/2".



For those whose requirements are less specialized than the professional user. Hot drop-forged of fine carbon steel, they meet or exceed government specifications. Four straight cutting sizes, 8" to 121/2". Four Combination* Cutting sizes, 7", 10", 13" and 16" Bulldog Snips for notching.



*Made with straight blades, but ground and shaped so they readily cut curves and irregular shapes as well as straight.

NEWARK 7, NEW JERSEY

Manufacturers of Shears, Scissors, Pinking Shears, Metal Cutting Snips and Garden Shears



Ninga

Form

needs.

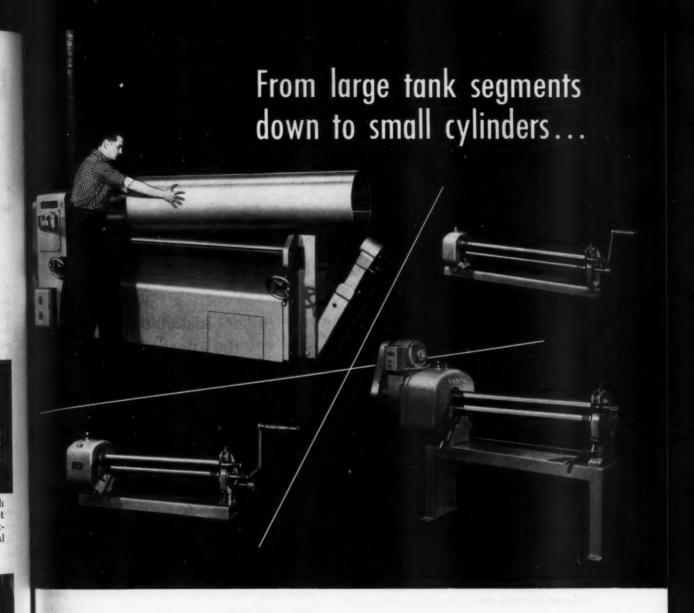
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Niaga

availa

power formi drum. bodies

Highly skilled craftsmen make final adjustments to assure that Wiss snips will cut perfectly for a long time.



Niagara Slip Roll Formers can turn out better work faster, at greater profit

Name the job! In the truly complete Niagara line... most complete of them all... you're sure to find the Slip Roll Former best suited to your sheet rolling needs. Working with lengths up to 120" and thicknesses up to 5/16" mild steel, Niagara Slip Roll Forming Machines are available in an unusually wide range of power and hand operated models for forming light and heavy pipe; stacks; drum, pail, tub and other container bodies.

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produce commercially true cylinders virtually free from flat spots, using thin materials as well as thick . . . and because of Niagara's unique slip roll features, completed cylinders can be removed easily and quickly without distortion, saving time and costs.

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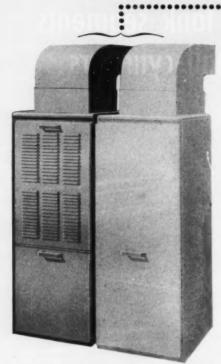


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A FUTURE COOLING system is suggested by dual controls serving the heating unit



'Foot in the Door'

Installation of a dual the appropriate controls the direction of a th

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By Henry B. Safford, Jr.

Advertising-Sales Promotion Manager
General Controls Co.

"Today's central heating installation is tomorrow's air conditioning system sale." That's a basic assumption and working principle of many alert dealers. They are convincing those customers who can presently afford only a furnace of the wisdom of installing a duct system and controls capable of meeting the requirements of heating and cooling loads, thereby readying themselves for future year 'round comfort.

Mounting sales of such controls have caused some of the control manufacturers to do some grass roots checking of this market. The investigations indicate it is relatively easy to sell the prospective customer on a dualpurpose installation.

Central air conditioning for residences is becoming so popular that sales volume more than doubles every three years. Preparation for year 'round air conditioning when a forced warm air furnace is installed costs little more than the original furnace installation alone. Later, it's a different story. A dealer can easily make this point to his customer.

There are two advantages to the dealer who follows this program in selling his customer on preparing for a complete winter and summer air conditioning system. An immediate result is more profits (about 10 percent and up) since a dual-purpose system is a bigger job. The second advantage — and the most important — is the eventual sale of the cooling unit itself.

In making the original installation the dealer puts

Sells Central Air Conditioning

thermostat, adequate duct system and can be the dealer's first step in future cooling system sale

a silent, yet persuasive salesman on the job of selling the cooling unit. That salesman is the thermostat. While ducts are unseen and the dual-purpose registers become associated with the heating side of the system, the dual-purpose thermostat is a constant reminder of the missing link in the system — the summer cooling unit. One side of the thermostat reads hot, the other cool. When a hot day comes along, the home owner gazes wistfully at the latter, and when things are right with him financially, another sale is born.

Must Follow Up Heating Sale

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Manufacturers' representatives making a survey found that if the customer is pleased with the original installation he'll usually go back to the same dealer for his summer cooling unit. However, good merchandising dictates that the dealer follow up his original sale.

Enterprising businessmen in the field keep their furnace customers apprised of new summer cooling models, price changes and the number of sales in their area; and they invite them to come in for demonstrations. They find that a sale in the neighborhood — to an enthusiastic customer — is often the key to another order.

Many of these dealers feel that aside from potential sales and a bigger job they would be remiss not to convince their customers that they should plan for year 'round air conditioning. "After all," they argue, "we're in the business of selling comfort. It's that intangible rather than any particular mechanism that we are basically concerned with. In this age, how can we honestly sell comfort if we ignore summer cooling when we sell warm air heating?"

Tips on Preparing the System for Cooling

The main things to be done in preparing the central warm air heating system customer for future year 'round comfort are:

- Size the ducts and design the layout to accommodate both heating and cooling air volumes and distribution.
 Cooling systems usually require larger ducts, and frequently, more exact register location, so a proper compromise between the two systems should be made.
 - 2) Install a dual-purpose thermostat.
- Place the thermostat where it can properly control the operation of both the heating and cooling equipment.
- 4) Install six electrical wires to the thermostat rather than the two required for heating equipment. (Until the complete year 'round system is installed, the cooling side of the thermostat can be hooked up to the furnace blower relay to provide summer ventilation.)
- 5) Specify wiring for a 230 volt power source for the future refrigeration unit.
- Provide adequate space next to the furnace for the refrigeration unit.

FAIL-SAFE!



COMBINATION FAN & LIMIT CONTROL

WITH SINGLE ELEMENT

Look Inside

TO FIND THE REASONS
FOR PERFEX FINER
FAIL-SAFE PERFORMANCE

- Reliable Simple design
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- · Available without case and cover
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Proven FAIL-SAFE performance is assured with the Perfex Combination Fan and Limit Control, designed to meet the needs of any forced warm air system installation. Its single thermal element actuates both fan switch and limit switch. By every standard the Series 480 is the finest — you can depend on Perfex engineering and quality. Write for complete literature.

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Automatic Controls for Heating, Air Conditioning, Appliances • Industrial Cooling Radiators • Heat Transfer Products • Coils for Refrigeration and Air Conditioning



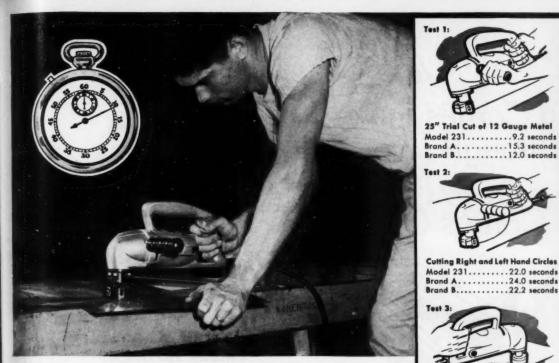
SERIES 404 WARM AIR LIMIT CONTROL

SERIES 175 MAGIC DIAL THERMOSTAT



SERIES 3500 MAGNETIC GAS VALVE





New *SKIL* Shear Sweeps Field in **Actual Comparison Tests!**

SKIL Model 231 Wins 5 Trials Out of 5 **Outperforms, Outproduces All Others**

Actual tests prove what many sheet metal men are learning for themselves. The new SKIL 231 Shear is far superior to all others on the market. These tests show the speed, power, and control that are making the SKIL Shear so

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popular on every job . . . in every shop. Here are actual results of impartial tests of the SKIL Model 231 Shear and competitive brands. Shown are performance figures for SKIL, Brand A, and Brand B.

SKIL SHEAR 231—Best All-Around

The results show that the 231 is the best allaround Shear on the market today. Faster, easier handling, more powerful! Features like the Contour Grip Handle at the rear of the tool make it a favorite with workmen who have tough cutting to do. Improved foot design keeps maintenance costs down for job superintendents. This is the shear you need in your shop. The SKIL Model 231.

FRIE! Mail the Coupon for a Demonstration and a FREE Trial of the SKIL SHEAR Model 231! See How Much Faster, Easier-Handling this New SKIL Shear is on your Toughest Cutting

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25" Trial Cut of 12 Gauge Metal Model 231 9.2 seconds



Cutting Right and Left Hand Circles Model 231......22.0 seconds Brand A......24.0 seconds



Small Diameter of Circular Cuts Model 231......11/2" Brand B.....(right hand) 21/2" (left hand) 41/2"

Cleanness of Cuts Model 231 Excellent Brand A......Good Brand B.....Poor



Power and Performance SKIL 40% more powerful than Brand A and 331/3% more powerful than Brand B.



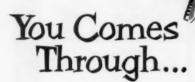
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- Allows you to operate your business with very little expensive inventory
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- Relieves you of stockobsolescence problems
- Helps you provide fast service to your customers
- Helps you with your advertising, selling, merchandising
- Saves you money in expensive office equipment and help
- And he enables you to offer a quality line you can sell with pride, and service with a minimum of trouble.

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That goes for wholesalers as well, and is one of the many reasons HEIL believes in the wholesaler method of marketing heating equipment; either wholesalers perform a real service, save dealers time and money, or they don't stay in business.

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... Work with him

... and Profit!

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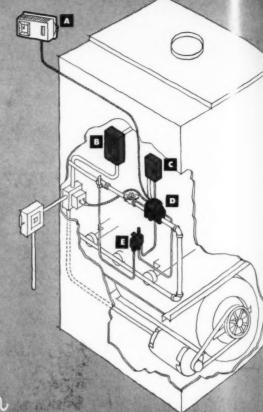
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the Honeywell

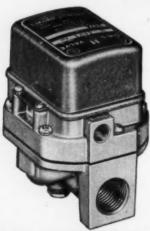
Electric Clock Thermostat

typical all-Honeywell control system

- A Honeywell Chronotherm, TM850, best-known clock thermostat on the market. Lowers room temperature at night, raises it in morning, at any desired hours, completely automatic. World-famous for comfort-accuracy.
- Combination Control, 1498B, easy to mount, easy to read and easy to set. Highly sensitive—it provides a small, handsome and accurate control for furnace fans, plus high limit for burners. In winter, fan-control is automatic and independent of the room thermostat. In summer, your customer uses convenient push-button to control the fan for ventilation.
- Pilotstat, C434, a reliable, switch-type pilot safeguard.
 Use it on furnaces and vented appliances burning street gases. It costs less, it's easy to mount, and its reset button is easier to get at.
- Diaphragm Gas Valve, V87, see description below.
- Pilot Burner, Q305, a "single-port" pilot—same flame lights burner and heats thermocouple which powers the Pilotstat. Reduced possibility of delayed ignition . . . no wasted BTU's. Less chance for clogging, too, thanks to special Honeywell design.



Why it's best to use an All-Honeywell Control System



Diaphragm Gas Valve, V87—Honey-well's new low-voltage diaphragm valve provides quieter performance at lower cost. Spring-loaded diaphragm of nylon-reinforced synthetic assures long life and tight closings. Convenient terminal panel eliminates need for splicing. Extra large pilot-valve porting. . . no special filters needed. Meets S.U.R. requirements. One model for all gases.

1. Your installation works better

Every Honeywell control is "system-engineered" to work with other Honeywell controls. This gives you maximum system efficiency.

2. You have the widest choice of controls and systems

Only Honeywell makes control systems for every type of heating plant and for all fuels. When you go all-Honeywell, you get the right system for every job. You're able to rely on one supplier for all your controls.

3. You get the best field service in the country

Need help in a hook-up? Puzzled by a performance problem? Your best and nearest answer is your Honeywell wholesaler or branch office. 70 years' experience in controls alone...plus the biggest field organization of all...puts more control knowhow at your service from Honeywell than anywhere else in the heating industry.

4. You make more money

You spend less time on service calls, more installing new jobs. And jobs are easier to sell when you tell your customer "I use Honeywell controls throughout." The biggest merchandising and advertising program in the industry means that Honeywell is the control-name your customer already knows.

Honeywell



First in Controls

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Your Rights in Repossessing Equipment

. . . when the customer has defaulted in a conditional sale agreement may depend on the court's interpretation of the law and on the methods you employ

THE PROTECTION afforded a dealer in air conditioning and warm air heating equipment under a conditional sale agreement is substantial, but the confusion of contradictory court decisions in different states suggests caution in employment of the remedies available to the dealer under such agreements.

In a case which has become an authority in some of the states in this point of law, a dealer contracted for the sale of equipment for \$2350, to be paid in four monthly installments. When the last installment was not paid the dealer sued for recovery of the payment, secured a judgment and was unable to collect. He then sued for possession of the equipment and was met with the defense that the judgment for the unpaid balance barred reclaiming the equipment and had given the buyer title to the goods.

Courts Differ in Findings

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The court in its determination of this contention said: "The contract says the title is to remain unchanged until the price is paid in cash. The seller had the right to receive the price and brought an action to get it. The judgment preserves the obligation of the purchaser's promise to make payments but puts it in another form. There is no inconsistency between an attempt to get the money and a reservation of title if the attempt is not successful. If in other jurisdictions there are decisions to the contrary we cannot follow them. Of course when the property has been taken the right to receive payment is at an end."

In contrast with this decision, a few months ago in an action brought for an unpaid balance, or in the alternative, for possession, another court asserted:

"Many years ago it was held that upon default by a conditional purchaser the seller may elect either to treat the transaction as an absolute sale and sue for the price or treat the sale as a nullity and retake the property, but he cannot do both."

The only course a dealer may safely follow when he is compelled to resort to the courts for the collection of an



THE COURT'S DECISION may depend on the dealer's prudence in repossessing equipment

unpaid balance under such a contract is care in the method he adopts; he must be certain the course he follows does not give the purchaser an absolute title. But before all this he should have a clear understanding of the state law lest he find he has exchanged ownership for a worthless judgment.

The extent of the rights of a seller in the seizure of equipment for failure of the purchaser to pay as agreed are fogged by this same confusion and the contradictory decisions of various state courts. When the purchaser is willing to surrender the equipment to the dealer after a default in payment, no question arises; it is when he refuses to do so that the best method to follow is often in doubt.

Trend Favors Buyer

Here as elsewhere in the law there is a definite trend away from the harshness of earlier years in the pressure which may be imposed by a dealer on a delinquent purchaser. The following comment was made by a court on conditional sale agreements nearly 50 years ago:

(Continued on page 130)

Albert W. Gray, author of this article, has had over 20 years' experience as au attorney in the courts of New York City. He has written widely on least matters and is the author of The Family Legal Adviser.

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HEATING CONTRACTOR A HEATING AND COOLING EXPERT



NO ONE IN THE HEATING BUSINESS CAN AFFORD TO BE WITHOUT THIS COMPREHENSIVE BOOK ON HEATING AND COOLING.

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Another feature is a comparison table of relative advantages and disadvantages of four different types of heating systems. Complete Thermo-Base installation instructions are also illustrated and described in this profusely illustrated catalog.

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Modine gas-fired unit heaters' light weight **SAVES YOU MONEY 3 WAYS**



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Here's a unit heater so far ahead in design it far outperforms other leading makes—yet needs only half the weight, half the size to do it. You get longer life . . . dependable, trouble-free operation. For only Modine offers stainless steel burners plus a choice of stainless or aluminized steel heat exchangers. And stainless has eight times the life of ordinary steel . . . aluminized four times!

There are other points of superiority, too—direct firing of tubes...heat delivery within five seconds of the thermostat's demand. Seven sizes to 220,000 Btu. Get all the facts now.

This Modine Gas-Fired Unit Heater has 25,000 Btu input yet weighs only 31 lbs. Ideal for factory offices, laboratories, washrooms,

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You'll find a Modine representative listed in your classified phone book. Or mail the handy coupon.

Modine UNIT

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Circumstances Determine Repossession Rights

(Continued from page 127)

"The purchaser authorized the dealer to retake the goods upon breach of conditions of the contract. If a breach occurred and the dealer used only such force as was reasonably necessary in overcoming the resistance the purchaser wrongfully interposed, the purchaser cannot recover any damages for the acts of the dealer. If, on the other hand there has been no breach of the contract and the purchaser has paid for the equipment, the dealer is a trespasser and liable for damages to the purchaser. Such contracts are burdensome and often oppressive but in the absence of fraud the purchaser is liable for the situation for he signed the contract."

Another incident of this character which further shows the attitude of the courts toward the retaking of goods sold with a reservation of title until payment has been made involved a purchase contract which provided:

"In default of any monthly payment the purchaser agrees to redeliver said equipment to the seller within five days after such payment shall have become due or permit the seller's agent to enter the premises where said equipment may be and without let or hinderance take away the same."

The agent of the dealer in this case called at the home of the purchaser, saying he wished to inspect the equipment. After gaining entrance through this misrepresentation he removed the equipment and the purchaser sued the dealer for damages.

Court Approves Dealer's Actions

In its decision in favor of the dealer the court said: "No violence or unnecessary force was used and all that was done was precisely what the dealer had a legal right to do, to wit, 'without let or hinderance take away the same.'"

Half a century or more after this case was decided another purchaser made a contract with the provision that: "In case of any default made in the payments it shall be right and lawful for the seller to peaceably or forcibly and without process of law, enter the premises where said property is and take possession thereof."

In the absence of the buyer two employees of the dealer broke into the house and removed the equipment. In its decision against the dealer for what the buyer claimed was an unlawful act the court said in awarding damages against the dealer:

"The courts are not in harmony as to the right of a seller under a conditional sale to forcibly break and enter the purchaser's house in his absence and retake the property sold although the right to enter and take the goods is reserved in the contract.

"In the present day where innumerable articles of personal property are sold under a conditional sales contract, it would result in too many disturbances of the peace to permit sellers to forcibly retake possession of property in the manner shown in this case. If resort to force must be had it should be secured through the proper legal outlets."

A purchase contract of this character involved in a recent lawsuit contained the provision: "Time is of the essence in this agreement and if you or your assigns deem yourselves insecure for any reason or if the undersigned fails to make any of said monthly payments, all remaining installments may be declared immediately due and payable, and in the event of nonpayment the undersigned agrees on demand to return the said merchandise to you or your assigns and you or your assigns may without notice or demand and without legal process, enter into the premises and take the merchandise."

When the dealer attempted to retake this property the purchaser resisted its removal, defied the dealer's agent to take the goods, and when he saw the agent was determined to do so, left the room in search of a weapon to protect what he claimed were his rights.

Dealer Can Exceed His Rights

"The frame of mind into which these men fell," said the court in its decision in the resulting action, "clearly demonstrates the wisdom of the rule and shows clearly that the dealer did what the law does not tolerate — he took the property by force and in a breach of the peace, and he must pay the penalty.

"Because a party to a contract violates his contract and refuses to do what he agreed to do is no reason why the other party to the contract should compel the performance of the contract by force. The right to an enforcement of this part of the contract must, in the absence of a consent by the purchaser, be enforced by due process of law the same as any other contract."

Passing of the harshness that once characterized the courts' interpretations of provisions for the repossession of equipment has found expression in a statutory law already adopted by some of the states; this law will probably be included in the Uniform Commercial Code now in preparation:

"When the buyer shall be in default in the payment of any sum due under the contract or in the performance of any other condition which the contract requires him to perform in order to obtain the property in the goods or in the performance of any promise, the breach of which is expressly made a ground for the retaking of the goods, the seller may retake possession thereof. Unless the goods can be retaken without breach of the peace, they shall be retaken by legal process, but nothing herein shall be construed to authorize a violation of the law."

[Note: While this discussion applies to actual cases, it should be remembered that legal rules vary in different states.] G G pi di in m ch th la Pi av oj

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General Controls' Snorkel Pilot Burners and Pilot

dirt and lint. Elimination of these foreign particles

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Pilot Generators, 260S and 26S Pilot Burners are available for all General Controls thermocouple-

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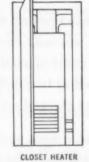
Generators incorporate proven design principle. The

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DIRT-FREE PRIMARY AIR THROUGH SNORKEL INSURES **BLUE FLAME PILOT** STABILITY ON ALL GAS-FIRED APPLIANCES

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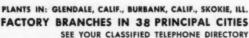


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260S Pilot Burner

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Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

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It's easy to avoid mix-ups and wasted space when you use Ohio Valley pipe and fittings. They come in handy cartons that are clearly marked as to quantity, type, and size — and can be stacked conveniently.

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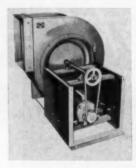
equipment developments

-(From page 60)

The unit desired can be equipped with either blower fan or propeller fan. Main feature is complete interchangeability of parts, according to the company.

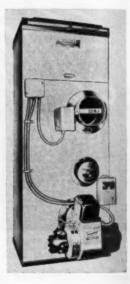
Utility Blowers

LINE of utility blowers with direct or belt drive and forward-curved or backward-inclined blades — The Trane Co., La Crosse, Wis. Line includes standard NAFM sizes between 4½ in. and 30 in. wheel diameter, capacities up to 15,450 cfm and static pressures up to 2 in. WG. Other features claimed for the packaged blowers are low outlet velocity, low noise level, versatility, low maintenance, lockseam housing and overhanging sheave adjustable drives which permit fan belts to be replaced without disassembly.



Above: Packaged Blower





Oil Fired Furnace

"Wondaire" oil fired counterflow furnace designed for perimeter system use in ranch or other one-floor homes without basements — Cox Mfg. Co., Ridgeville, Ind. Cold air is drawn into the top of the unit; filtered warm air is forced out through the bottom into the under-floor duct system. Hot combustion gases are directed around the heat exchanger by baffles designed to improve the heat extracting efficiency of the unit.

Residential Water Heaters

MOLECULAR BONDED glass lining which is impervious to corrosion for use in new line of heaters — Pioneer Water Heater Corp., 3131 San Fernando Rd., Los Angeles 65. Glasslike material is bonded to heavy steel tank wall by fusion under extreme temperatures said to produce an interlocking of the two materials for permanent union. Tank cleaning operation prior

SELLING HEATING
ISN'T LIKE SELLING FUR COATS...





Maybe glamorizing heating isn't so funny, at that. Mrs. Buyer isn't interested in heat exchangers, fan speeds, filter sizes . . . and Mrs. Buyer is a mighty important factor.

When you tell Mrs. Buyer that here are heating and cooling units whose inner parts are ceramiccoated so that they won't ever rust or corrode, though, you'll score with her.

When you tell her that Permaglas gas-fired heating has the world's only modulated heating—the only full-time comfort, she'll listen—and probably buy. And when you tell her that Permaglas heating and air conditioning is made by A. O. Smith, makers of famous Permaglas glass-lined water heaters, she'll be on your side, without a doubt.

Permaglas is going places—are you aboard?

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HEATING AND AIR CONDITIONING



Permaglas glass-lined water heaters mean freedom from rust and corrosion to over 2,000,000 families. A. O. Smith-Burkay Commercial Water Heaters are the world's most popular in their field.



Through research



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to bonding eliminates the possibility of pits in the glass lining, the company reports. Heaters will be made in 20, 30, 40 and 50 gal capacities.

Custom Built Folder Brakes

THREE CUSTOM BUILT folder brakes designed to meet individual requirements for length of bend, distance between bends, sharp or radius bends with or without



flanges, offsets or beads — Dreis & Krump Míg. Co., 7404 S. Loomis Blvd., Chicago 36. Brakes are in

single-wing model or double-wing models with open throat and fixed or moving head. Units serve as single purpose machines or incorporate flexibility to handle a variety of sizes or products. Pneumatic, hydraulic or mechanical operation is offered to suit individual shop conditions.

Surface Finishing Machine

POLISHING MACHINE with dual action moving in two directions at the same time — Detroit Surfacing Machine Co., 1333 E. Eight Mile Rd., Detroit 20, Mich. Shift ring converts the unit to a high speed, off-center spinner which is said to reduce normal abrasive swirls to a minimum enabling workmen to polish steel and non-ferrous metals. Model DA is air powered; weight is approximately 3 lb.

Plastic Duct-Joining Tape

MODEL 474 plastic "Scotch" tape for joining cold and warm air ducts and sealing the joints in heating and air conditioning installations — Minnesota Mining & Mfg. Co., Dept. P-1631, 900 Fauquier St., St. Paul 6. Designed for use on round, square or flexible metal ducts, the tape is claimed to withstand occasional temperatures up to 240 F. Plastic film backing will withstand acids, alkalies, salt solutions, water, alcohols and hydrocarbons, the company reports. Tape is available in 36 yd rolls in widths from ½ to 24 in.

beat today's high costs



THERMAC : D COMPANY

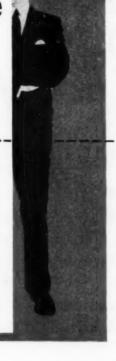
800 East 108 Street • Los Angeles 59, California "Over 23 years' experience building gas controls" Install this assembly and forget it—the most economical combination of Regulator and Valve on the market today. By combining these two universally accepted products, the Thermac Appliance Regulator with Thermac's specially heat-treated aluminum alloy gas shut-off valve, an unusually low cost assembly is assured.

The Regulator itself—the Thermac "T" Series, is very simply and ruggedly designed with so few parts it is practically fool-proof. High in capacity—easy to install in cramped and crowded quarters. Easy to service without removal from line. All these features plus universal acceptance by *leading* appliance builders means that your selection of Thermac will be highly regarded wherever your appliances are sold.

Compare these fine products in any way you choose—performance, quality and price — and you will choose Thermac. Get full information on the above assembly today.

if half of you wants the finest air conditioning products

but the other half wants competitive prices





get together with USAIRCO

"Why should I get together with usAIRco? Have you folks got some magic "cure-all" for all the headaches of an air conditioning distributor?"

... No sir, but we do have a real understanding of your business and problems. We're large enough to handle all your air conditioning needs ... yet small enough to give you the close, personal cooperation needed to iron out those problems ... we call it a "two-sided partnership!"

usAIRco has been in air conditioning for more than 30 years... manufactures a complete line of the finest competitively priced packaged products. And usAIRco backs you up with the industry's most aggressive dealer aid and sales promotion program, including the new Warehouse and Finance Plan that makes equipment available when needed without tying up capital! The 5-year warranty and service allowances are the most liberal in the air conditioning field! It will pay you to get acquainted with usAIRco. Just drop us a note, right now!

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"ADD-ONS" YEAR ROUND AIR-COO

N. John Craig, Manager, Packaged Refrigeration Div. United States Air Conditioning Corporation Minneapolis 14, Minnesota

I would like the complete story on "a two-sided partnership", the usAlRco distributor plan.

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AMERICAN ARTISAN, FEBRUARY 1955



VALUABLE FEATURES NOT FOUND IN OLD STYLE BRACKETS

- Absolutely non-binding action. New DURO-BRACKET assures perfect blade action even though brackets are placed off-center, placed at an angle, or not placed equally distant from axis of blades!
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equipment developments

Counterflow Conditioner

Air conditioning unit which can be incorporated into the perimeter heating system to save floor space — Williamson Heater Co., 3500 Madison Rd., Cincinnati 9. Evaporator



coil is located in the furnace enclosure; condensing unit is placed outdoors with connections made through 3 in. duct concealed in or under the floor. Outdoor unit contains compressor, condensing coil and fan, receiver and dual pressure control. Evaporator coil is secured horizontally inside the enclosure below the furnace; below the coil are slanted fins which collect moisture removed in the air cooling process. Removable damper permits air to bypass the coil during winter operation. Units are available in two and three ton models.

Portable Furnace Cleaner

MODEL 950H portable heating and air conditioning system cleaner — Premier Co., Dept. KP, 755 Woodlawn Ave., St. Paul, Minn. Pleated filter is designed to give three times the former area without overlapping or clogging, the company states. Unit is powered by a ½ hp, 600 w 115 v,

Geared to Meet the Need for Speed

That's why STANLEY ELECTRIC TOOLS are dependable workers on all jobs.



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DRILLS! Rugged — accurate — powerful — complete — from the ½" Mighty Midget to the ½" largest of the line. Stanley Electric Drills are built to serve — to do the job.



GRINDERS! Four different sizes — light enough for hand-grinding. 2 can be mounted and used as stationary grinders.





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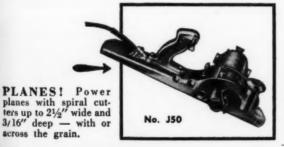




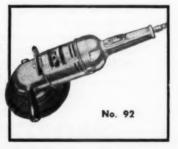
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POWER SAWS!
NEW 7" builders saw
(W70) makes every cut
used in modern building.
Protected against blade
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For virtually every Stanley Electric Tool indicated above, there is a full line of attachments. And each tool is built to Stanley's rigid standard of quality—quality known the world over. You can use any or all

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If the vent is drawing properly, the flame will be drawn into the draft hood. If the vent is not drawing properly, the flame will be blown away or snuffed out entirely. When this happens, you know that harmful vent gases are spilling into the room and the appliance is not being vented correctly.

this test is important . . . to you — and your customer

With poor venting, everybody loses! To your customer, vent gas spillage means stuffy, stale-smelling room air and possible condensation damage to walls and furnishings. To you, it means troublesome complaints and callbacks, and often the need to make costly repairs or replacements.

be SURE your next venting job is right - with METALBESTOS

Metalbestos — the double-wall, **insulated** vent pipe — keeps the gases hot **inside** the vent, assuring a quick, strong draft for the complete removal of combustion products. The same insulating principle keeps the outer pipe cool, thus offering much greater protection than single-wall vents against dangerous overheating of adjacent surfaces.

USE METALBESTOS . . . it costs less to be sure with the best



Listed by Underwriters' Laboratories, Inc. as a Type B vent for use with approved gas appliances



Stocked by principal jobbers in major cities. Factory warehouses in Atlanta, Dallas, Philadelphia, De Moines, Chicago, New Orleans.

equipment developments

a-c or d-c motor. Precision ball bearings are sealed in lubricant. Unit is 19 in. high, has an outside diameter of 14½ in., and ½ bu tank capacity.

Rubber Solenoid Valve

"SOFT-SEAT" solenoid valve designed for positive seal-off — Minneapolis Honeywell Regulator Co., 2726 Fourth Ave. S., Minneapolis 8. Valves are available in $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1 in. for 24 and 115 voltages. Increased



capacities, replaceable coils and conical spring-loaded plunger combine with the soft disc material and gas pressure for tight seal-off, according to the company. Rotating head feature climinates the necessity of loosening the body union nut to reposition the conduit spud for desired alignment in making electrical connections.

Insulation Pin Welder

"InsuL-Pin" welder for attaching insulation pins to galvanized ductwork - Graham Mfg. Corp., 1541 E. 8 Mile Rd., Ferndale 20, Mich. Redesigned cabinet provides space for storage of the welding gun, ground cables and gun leads. Welder is designed to operate from a 110 v 60 cycle power supply and is not adversely affected by high or low line voltages within the range of 90 to 130 v, the company reports. New model has a working range of a 100 ft diameter circle. Elimination of tubes and reduction in the number of moving parts within the unit is said by the manufacturer to minimize trouble.

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COOL COMFORT FOR ALL!

NOW! Complete Home
Air Conditioning at
Window Unit Price

ROUND OAK

Clima-Twin-Zone AIR CONDITIONER

Yes, your retail price, with normal installation, will be the same—or less—than window units which have neither the capacity nor the air delivery efficiency of the Clima-Twin-Zone. And this air-cooled unit can be installed in new or existing housing "without tearing the house up" . . . either as an independent system or in conjunction with any duct heating plant. A living-room damper control

directs cooling to the living-room area by day,
the sleeping area by night. On all
but the warmest and most humid
days, a Dual-Zone setting cools the

whole house.

Here is your answer to air conditioning for the average family.

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Round Oak Co., Inc., Dowagiac, Michigan

Gentlemen: Please rush me full information on your new Clima-Twin-Zone air conditioner.

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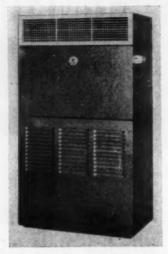
Company

Address

City

Packaged Air Conditioner

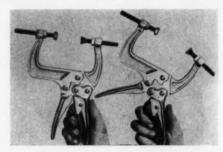
"Weatherwise" air conditioner in 5 ton capacity for residential and store application — Aug. G. Barkew Mfg. Co., 2230 S. 43rd St., Milwaukee 15.



Self-contained unit is also available without plenum and fan for use with existing heating systems; it can also be equipped with heating coils. F5K furnace model and C5K store model feature one and three phase hermetic compressors, counterflow condensers, aluminum fin evaporators with copper tube, capillary system and cooling-heating switch controls for remote installation and use with standard thermostats.

Plier-Action Toggle Clamps

THREE TRIGGER-RELEASE portable plier-type toggle clamps which enable the operator to hold the work piece with one hand and clamp and release with the other — Detroit Stamping Co., 350 Midland Ave.,



Detroit 3. Models 482, 484 and 486 have complete bearing surfaces of hardened metal, said to assure a minimum of 135,000 clamping and unclamping cycles under a 600 lb pressure. Forged components are heat treated and drawn for strength; enough resilience is retained to permit drilling or alteration

FINEST OF THEM ALL!

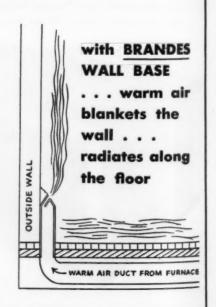


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WALL BASE HEATING

Experiments are over! You know you're getting the "first and finest" wall base heating when you specify "Brandes". Better get complete information! Write The Brandes Company, 2046 Winnebago St., Madison 4, Wisconsin!



Fact:

Rugged Westinghouse Industrial Heaters available in 24 Sizes . . . 8 Coil Selections . . . 150 Ratings from 100,000 to 2,500,000 BTU/hr . . . 2,000 to 25,000 CFM each

HEAVY-DUTY COIL.
Tapered steel fins bonded to 1" wrought iron pipe—with internal steam distributing pipe—solder dipped for permanent bond and corrosion resistance.

- 1. Proven, Westinghouse-manufactured, extended surface heating coils good for continuous operation up to 200 psig.
- 2. Die-formed casings with rounded corners eliminate accidents and dirt catching pockets. Front and back panels easily removable.
- 3. Multiple louvered outlets for efficient distribution of heated air.
- 4. Self-aligning, grease-lubricated ball bearings mounted outside casing, readily serviceable.
- 5. Face and by-pass dampers permit continuous air circulation to maintain uniform temperatures.

NOTE: Louver type mixing box accessory permits introduction of fresh air for make-up and ventilation, with or without filters.

Solve your space heating problems with Westinghouse-Sturtevant Industrial Heaters. Eliminate cold, drafty conditions caused by excessive cold infiltration through leakage or exhaust.

Two Types With Wide Applications:

GENERAL PURPOSE HEATER... For manufacturing areas, warehouses, garages, commercial buildings—with standard non-ferrous heating coils.

HEAVY-DUTY HEATER... For continuous-duty high-pressure systems, or industrial process work—with wrought iron heating coils.

The compact packaged engineering of every Westinghouse-Sturtevant Industrial Heater provides units for mounting on floor, walls, or suspended from ceilings. In short, they can be placed where they will do the most good, and can be relocated to meet any change in plant layout.

Every unit is backed with a Westinghouse exclusive one warranty. Only Westinghouse makes all principal components—Fans, Heating Coils, and Motors. You can get unit engineering and single equipment responsibility.

MORE FACTS? To find out how to solve your particular heating problem, call your Westinghouse-Sturtevant Sales Engineer...he is the "Man With The Facts" on heating, air handling, and electronic air cleaning... or fill in coupon below.

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Westinghouse

	Westinghouse Electric Corp.
	Sturtevant Division, Dept. 7A
1.	Hyde Park, Boston 36, Mass.
	Please send more information on your Industrial Heaters.
	NAME AND TITLE
	COMPANY
	CITYSTATE



FLEXIFLO adjustable air diffusers reduce installation costs by providing for rapid, easy adjustment of air volume and pattern after installation by simple knob adjustment.

Engineering is simplified since the FLEXIFLO's wide range of adjustability provides wide latitude in selecting the correct size diffuser.

FLEXIFLO diffusers assure uniform air distribution with built-in equalizing deflectors which are easily adjustable after installation. Rapid draftless mixture of supply and room air is assured.

FLEXIFLO diffusers for every cooling, ventilating and heating need are made in 12 standard sizes, up to a capacity of 12,000 CFM.



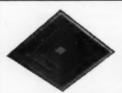
FOR COOLING

TYPE R—Air travels in a constant pattern parallel to the ceiling regardless of volume adjustment.

FOR COOLING & HEATING

TYPE V—Air diffusion pattern and volume are fully adjusable, after installation.





SQUARE

TYPE H — Fully adjustable square diffusers and fixed rectangular 2, 3, and 4 way diffusers.

FOR SIDEWALL & CEILING

TYPE S — With Type R or V blades to supply desired air pattern for ceiling or wall installation.



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1350 Garrison Ave. • New York 59, N. Y.

to fit specific applications. Model 482, with narrower jaw span, is designed for use in cramped conditions. Trigger release frees one of the operator's hands in unclamping the work piece; slight pressure on the trigger-handle springs clamp open.

Outside Bulb Heating Control

"Weather-Man" heating control with remote outside temperature sensitive bulb — Automatic Devices Inc., Weather Controls Div., 714 Hillgrove Ave., Western Springs, Ill. Regulator case is installed indoors. Program dial which automatically controls heat during the day provides night setback and a morning buildup period. Featured is a manual "Variator" dial which can be positioned to variably increase or decrease heat flow in case of special requirements; hand switch is also provided.



Above: Heating Control





Gas and Oil Fired Furnaces

SERIES OF gas and oil fired forced warm air furnaces ranging from 75,000 to 140,000 Btuh input and from 72,800 to 112,000 Btuh output — Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N.Y. Models include "U" highboy series for basement or closet; "B" lowboy series for basements; "C" counterflow series for perimeter heating, slab and crawl space application; and "H" horizontal series for attic, crawl space or closets. All models feature new outer casings and electronically seam welded heat exchangers. Combustion chambers combine stainless steel and ceramics on oil fired models.

Packaged Air Conditioner

"ROYAL-AIRE" redesigned self-contained air conditioner which can also be equipped with a heating coil — Union Asbestos & Rubber Co., 332 S. Michigan Ave., Chicago 4. Pump-down control system permits a minimum of gas to remain at low pressure in the coils when the machine shuts down. Front panel is

AMER



Install Microlite Coated Duct Liner without precision cutting and... without fitting of separate pieces

If there's any simpler way of lining ducts we've never heard of it. Just cut the required length from a roll of Microlite glass fiber duct liner and apply it to the sheet metal by adhesive. Then form the insulated duct section in the brake. That's all. No precise cutting. No fitting of separate pieces. No special procedures of any sort. And when you're all through you've got a most efficiently insulated duct.

SOUND ABSORPTION VALUE: 1/2 inch liner has a noise reduction coefficient of .60; 1 inch of .80.

THERMAL QUALITIES: "k" value of .20 at 50°, .21 at 75°, .23 at 100°, .27 at 150°, .31 at 200°.

AIR EROSION RESISTANCE: Coated liner for all velocities up to the highest normally required. If desired, uncoated liner may be used for velocities under 3000 feet per minute.

FEATHERLIGHT: 1 inch liner with coating on one side weighs less than 2¼ ounces per square foot.

HANDLE-ABILITY: Extremely soft, resilient and pleasant to handle. Doesn't cause itching. Men like to work with it.

For a technical bulletin and sample, and name of your nearest distributor, write to Glass Fibers Inc., 1810 Madison Avenue, Toledo 2, Ohio.



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WIRON Glass Textile Yarns • Rovings • Micro-Fibers

WEAMAT Vapor Barriers • BLUE FLAG Pipe Wrap

MICROLITE Thermal and Acoustical Insulation

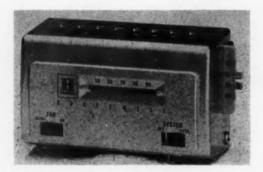
COUSTIC-AIRE and THERMO-JET Aircraft Insulations



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in three pieces with two return air openings — one through the fluted area, the other through a collar connection at the rear for duct operation. Fresh air connections are on both right and left sides; entire case is lined with ½ in. insulation. Large squirrel cage fan can be used with a larger motor when the unit is installed with duct systems. Unit is available in 3, 5, 7½, 10 and 15 ton capacities, each with five row cooling coils mounted in a vertical position to increase dehumidification capacity.



Heating-Cooling Thermostat

DOUBLE DUTY thermostat which automatically selects either heating or cooling for either add-on or combina-

tion heating-cooling units — Minneapolis-Honeywell Regulator Co., 2726 Fourth Ave. S., Minneapolis 8. The instrument provides automatic changeover between heating and cooling according to temperature changes in the air conditioned home. It also provides fingertip selection of continuous or intermittent fan operation. Model T833B provides for complete shut-off of the system; model T833C permits shut-off of the cooling system alone.

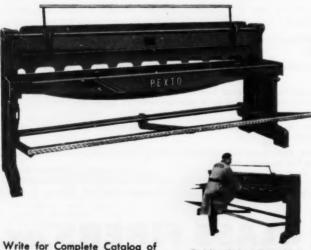
Removable Core for Air Diffuser

REMOVABLE CORE for use with models LCF sidewall air diffusers and B60 ceiling air diffusers — Air-Factors, Inc., 1624 S. Raymond Ave., Monrovia, Calif. Core for the B60 series is in a number of patterns, both square and rectangular.

Fractional Horsepower Motors

REDESIGNED LINE of fractional horsepower motors in 48 frame size — Westinghouse Electric Corp., Box 2099, Pittshurgh 30, Pa. Motors range from 1/6 to 1/3 hp; distance from base to conter line is 3 in. All models incorporate a simplified straight-through ventilation system with vent holes limited to the bracket areas. Terminal board design on single phase motors permits change of voltage or motor reversal by interchanging plugs in the motor conduit box. Coil

PEXTO foot shear one-man operated



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Pexto's exclusive engineered fool treadle action permits money saving . . . one-man operation.

Saves time... man hours on every job

Eight-foot ... 18-gauge capacity (mild steel). The Pexto One-Man Foot Shear ... saves time and money. Designed for easy, accurate shearing. Adjustable graduated side gauges on bed. Graduated parallel rack and pinion back gauge ... Weight and pressure of single operator shears material. Shearing action is designed with mechanical advantage of 6 to 1, and rake is low enough to make narrow cuts with least possible curl.

THE PECK, STOW & WILCOX COMPANY, MAIN STREET, SOUTHINGTON, CONNECTICUT

An Exhaustive and Clear Explanation of Manual No. 7 That Shows You-



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The author of "HOW, WHAT and WHY"—Professor S. Konzo of the University of Illinois—is one of the nation's foremost authorities on every phase of residential air conditioning and warm air heating. It was in Professor Konzo's office that the brunt of the work of assembling data and making the calculations for Manual No. 7 was carried out, and he was, therefore, ideally qualified to prepare this explanation of the Manual's background, make-up and correct use.

Table of Contents

- The New Manual Simplifies Engineering
- How to Figure Heat Losses
- Furnace Selection and Rating
- Blower Selection and Blower Ratings
- Successful Blower Operation
- Registers—Locations, Types, Sizes Procedure for Making Plant Layouts
- Equivalent Length of Fittings
- Equivalent Length of Registers
- Sizing the Branch Ducts
- How Tables 8 and 9 Were Established Sizing Return Air Ducts
- Trunk Duct and Bonnet Construction Sizing of Trunk Ducts
- How to Adjust and Balance a Warm Air
- Winter Air Conditioning System
- Reference List
- _ Cross Index

-HOW to Use It Correctly

-WHAT Experience Is Behind It

-WHY Every Dealer Should Use It

"The HOW, WHAT and WHY

Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems"

by S. KONZO

Special Research Professor—Engineering Experiment Station, University of Illinois

75 Pages - 81/2" x 11" - \$1.00

Users of Manual No. 7 will find this "HOW, WHAT and WHY" booklet invaluable toward acquiring a clearer understanding of the Manual and properly applying it in the planning and installation of warm air winter air conditioning systems. Published originally as a series of articles in the magazine AMERICAN ARTISAN, this clear and comprehensive analysis has proved so helpful to dealers everywhere that now, in response to a wide demand, it has been reproduced in full in this new 75-page booklet "HOW, WHAT and WHY."

Professor Konzo begins "HOW, WHAT and WHY" by telling why a standard designing procedure for warm air winter air conditioning systems was needed by the industry. He reveals how the country's leading manufacturers of warm air heating equipment got together to work out such a method . . . how nearly 200 of the industry's key engineers held scores of meetings over a long period to coordinate data and experience in working out the dependable, simplified design and installation procedure which Manual No. 7 now offers.

Following this introduction, "HOW, WHAT and WHY" goes into a detailed explanation of the designing procedure itself, section by section. It shows the research and experience behind every rule, recommendation, and table the Manual contains. It tells why such factors as temperature drop in ducts, c.f.m. air delivery, air changes per hour, and various other factors which were once considered vital in the planning of forced air heating systems no longer need concern the designer. It provides much interesting supplementary information and comment which helps make each step in the suggested procedure easy to follow and assures the user of the Manual's complete soundness.

An especially useful feature of this explanatory booklet is a Cross Index which permits finding quickly full information about any item in the Manual which is not wholly clear. All in all, this "HOW, WHAT and WHY" booklet will not only assist owners of the Manual to use it to the fullest possible extent, but it will, in the bargain, add materially to their knowledge of every phase of winter air conditioning.

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Attached is my remittance of \$1.00 for which please send me one copy of "HOW, WHAT and WHY."

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AMERICAN ARTISAN, FEBRUARY 1955

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3 NEW FASTENERS specifically designed FOR YOUR REQUIREMENTS



PHILLIPS FINISHING **HEAD SCREWS**

This special one-piece fastener gives the appearance of a screw and separate finishing washer. Requires a single application. Saves time on the line . . . cuts fastener costs. Available as sheet metal screws, Sems, wood, machine and thread-cutting screws.

PHILLIPS HEXAGON WASHER HEAD SCREWS

Head and washer are one piece. Eliminates separate flat washers. Provides greater production line efficiency. Hexagon head simplifies service in the field. Washer covers clearance holes . . . assures better seating. Now available in all threads and sizes.

SPECIAL-PURPOSE HEXAGON POINTED BOLTS

New hexagon point allows bolt adjustment, even after head has been covered in assembly. Available in any head style . . . also as Sems with pre-assembled lock washers or stampings. Can be used as a thread cutting screw without damaging the point.

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MATIONAL LOCK COMPANY

Rackford, Mineis

leads are connected directly to the board. Sleeve bearing construction provides lubrication and nylon thrust washers to permit a variety of mounting positions. Rotors and brackets are die-cast.

High Pressure Oil Burner

OIL BURNER designed to operate at 0.65 to 3.5 gph - Century Engineering Corp., 401 Third St., S.E., Cedar Rapids, Ia. Flexible for use in primary heating units, the burner consists of one basic unit adaptable to several different capacities through an exchange of head, nozzles and manifolds, the company states. Integral and universal adjustable flanges are available for mounting directly to the heating plant. Steel stampings are said to be firmly welded in fixturing equipment for proper alignment.



Above: Oil Burner Right: Cooling Tower



Atmospheric Cooling Towers

"THERMAL" atmospheric cooling towers, rated from three to 10 tons - Thermal Agency, 1515 Dallas. Houston 3. Towers are of redwood construction; basin floors are pre-assembled. Towers are complete with corrosion resistant hardware, suction connection and screen, drain connection, bronze float valve assembly and galvanized steel spray headers. Copper or plastic headers are available at extra cost. Featured are "Aspir-Jet" spray nozzles which are said to break up the water particles at low pressures and aspirate air with the mist stream.

Air Cooled Condenser

"KOOLER-AIRE" air cooled condensing unit utilized with various equipment to provide cooling alone or to convert an existing warm air heating system to year 'round air conditioning - U.S. Air Conditioning Corp., 3300 Como Ave., S. E. Minneapolis 14. Available in two and three ton models, the unit combines sealed hermetic motor-compressor which is suction gas cooled, four row condenser coil with copper tubes

and aluminum fins, welded steel receiver with a pressure relief and a blower with forwardly curved wheel and variable pitch "V" belt drive. Copper tubing carries refrigerant to and from the direct expansion cooling coil. Evaporator capacity of the two ton unit varies from 2.09 tons with 75 deg ambient temperature to 1.71 tons at 115 deg.

Roof Ventilator

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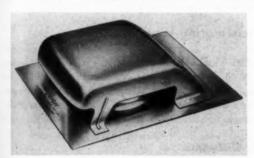
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REDESIGNED ROOF VENTILATOR with top formed from a single piece of metal and styled to give a low silhouette—Leigh Building Products Div., Air Control



Products, Inc., Coopersville, Mich. One-piece jointless base minimizes leakage and simplifies installation. New design provides greater actual free area than previous models, the company reports. Ventilators are in two sizes, available in galvanized metal or aluminum.

Direct Drive Blower

TWIN WHEEL direct drive blower with motor mounted in the center of the blower housing and two blower wheels on shafts extended from each side of the motor



— Air Controls, Inc., 2310 E. Superior Ave., Cleveland. Designed to provide unobstructed air flow, the unit features rugged center suspension of motor and blower wheels for balanced loads on motor bearings through minimum overhang and improved air flow. Anchored motor minimizes strain, wear and vibration, the company states. Rigid blower outlet angles permit mounting in any position as well as serving as a resilient mounting for all-angle discharges.



new literature . . .

Purchasing Laws

LAWS AFFECTING a purchaser's relationship with his suppliers are discussed in the book Purchase Law Manual, by Albert W. Gray (\$6.00) - Conover-Mast Publications, Inc., 205 E. 42nd St., New York 17. The manual is not intended to replace legal counsel; however, it does tell much of what to do - and what not to do - in making and performing purchase contracts. It is divided into 56 short chapters each of which deals with some particular phase of purchase law. Special attention has been devoted to the index to make it as complete as possible and to facilitate reference.

Protective Coating for Aluminum

"ALODINE" No. 1000 invisible protective coating for aluminum is described in a four page folder-American Chemical Paint Co., Ambler, Pa. The coating is suggested for use on fans, ducts, roofing, gutters and other unpainted aluminum surfaces.

Turbine Ventilators

FOLDER describes a turbine ventilator for exhausting hot and cold air from homes, restaurants, theaters, stores, etc. - Empire Ventilation Equipment Co., 35-39 Vernon Blvd., Long Island City 6, N.Y. Features claimed for the unit include rigid construction, silent operation and no operating or maintenance costs. A table gives approximate shipping weights and prices for 18 models ranging from 4 to 48 in. in size

Sheet Metal Duct Seaming

FOUR PAGE CIRCULAR describes a machine for making interlocking seams on sheet metal duct work - Speed-Seam Co., 820 N. Wolcott, Chicago 22. Features include an automatic gripper release, a roller adjustable to sheet metal thickness, adjustable work supports and a crank operated end support. Drawings show the machine and its featured parts and illustrate how the seaming is accomplished in one operation.

Recirculating Water Cooler

DATA SHEET describes Model FTS recirculating water cooler-Flight Mfg. Corp., 925 N. 8th St., Camden 2, N. J. Features include removable inlet panel, attractive design, low maintenance and low initial cost. Also available is a catalog insert illustrating and describing the company's thermal humidifier.

Air Diffusers

CATALOG No. 33 (16 pages) presents information on "Flexiflo" adjustable square and multi-pattern rec-



SEE YOUR JOBBER

- ALL SIZES
- ALL ANGLES
- ALL GAUGES
- ALL METALS

"Tapered to Fit"

"Galvanized after Formed"

4730 Madison Rd.

Cincinnati 27, Ohio

tangular air diffusers—Universal Diffuser Corp., 1360 Garrison Ave., New York 59. Included are selection charts, installation instructions, sizes, prices and weights.

Self-Contained Air Conditioning Units

CATALOG No. RE-154 includes technical data and specifications on self-contained air conditioners which are built with the evaporative condenser as an integral part of the unit — Alton Mfg. Co., Refrigeration Div., 1112 Ross Ave., Dallas 2. The condensers are built of copper tubing and are oversized to assure high efficiency in areas with high wet bulb design conditions.

Overhead Unit Heaters

BULLETIN PB1-54 covers "Panelbloc" gas fired overhead heaters — Thermobloc Div., Prat-Daniel Corp., South Norwalk, Conn. The heaters use natural, manufactured or bottled gas and require no electrical connections. They are suggested for use in garages, shopping centers, show rooms, etc. Specifications and dimensional data are included for models CR 63 and CR 125.

Metal Finishing

Specifications and recommendations to aid in selecting and using abrasive grain and powders in metal finishing are presented in a 42 page booklet (No. 14) — The Carborundum Co., Niagara Falls, N.Y. Topics covered include properties of abrasive grain and powders; elements of metal polishing; preparation and care of polishing wheels; and general rules for good polishing.

Heating-Clothes Drying Unit

SUBJECT of a four page brochure is home heating as provided by the "Heat-N-Dry" combination gas furnace and clothes dryer — Herbster Products Co., 877 Addison Rd., Cleveland 3. The heating unit features the "Torcon" cast iron heat exchanger with a concentric venturi design. On the back of the folder are dimensional drawings, ratings, specifications and standard equipment.

Stack Fans and Duct Boosters

BULLETIN No. 109-A (16 pages) presents information on stack fans, duct boosters and exhaust fans — International Engineering, Inc., 1145 Bolander, Dayton I, O. Illustrations show "LDB" low pressure duct boosters, "LDX" high pressure duct boosters, four and eight blade exhaust fans and typical installations of stack fans. Included are tables giving specifications, capacities and dimensional data.



keep the weather outdoors... where it belongs!

recommend and use

FOLLANSBEE TERNE METAL
for weatherproofing

Every house needs weathersealing, and every flashing, coping, valley or gutter is another opportunity for you to make a larger profit by installing Follansbee Seamless Terne Metal.

Weathersealing with Follansbee Terne is easy. Its ductility makes it easy to shape and bend. Tin-lead coating makes it easier to solder . . . can never flake or peel. Terne is the ideal weathersealing material for built-up, composition, wood, asphalt or asbestos shingle, slate or tile roofs.

Leading distributors are prepared to supply you with this high quality Terne Metal in 40 lb., 20 lb., and 8 lb. coatings, in various widths from 4 inches to 28 inches, in 50 foot continuous rolls. Be sure to specify Follansbee Terne Metal the next time you need "Valley Tin" or "Roofing Tin"...the most economical weathersealing available because of the savings in installation time and labor.

FOLLANSBEE STEEL CORPORATION

General Offices and Plants: Follansbee, West Virginia



SEAMLESS TERNE ROLL ROOFING
Polished Blue Sheets and Coils
Cold Rolled Strip
Sales Offices in Principal Cities



speed equipment to give you a precision ring at the lowest cost. Write today about your requirements, and the National list of stock sizes and quantity discounts.

Sheet metal fabricating and assembly work is another National specialty organized for YOU. Use it as your standby facility.

Tens of thousands of National rings

have been used in all parts of the

country by large and small sheet metal shops. They are rolled by experts on the most modern high-

Bishop 7-4255

2142 S. Sawyer Avenue

Phone -

Chicago 23, Illinois



WALKER SCORES AGAIN!



REVOLUTIONARY IMPROVEMENTS in Automatic DRAFT REGULATORS

Now for the first time in Draft Regulator construction a REVOLUTIONARY improvement seals the adjustment assembly (the heart of any draft control) and its intricate mechanism away from dirty, corrosive soot

and carbon deposits that destroy its proper functioning. Illustration shows heavy deposit of soot and carbon on the back side (actual installation). Cut-away

view shows how adjustment assembly is protected from rust and dirt with this new, outstanding (patents pending) sealed-in feature.

This view (actual installation in use a year) shows how front side of regulator is clean as new. Sensitivity of the pivot pins on the dirty regulator are positively not impaired because (1) They are located on the clean face of the vane and set back away from edge; (2) The box type hinge makes it possible to seal the knife-edge bearings from the dirty soot



deposits on back of vane; (3)
The hollow box construction
provides a knife-edge bearing
and centering guide for vane.



This is an unretouched photograph of unit in use for over a year. This shows how clean and glistening pivot pins remain after years of use.

Shows how box type hinge for pins is completely closed front and back. Assures sensitive service for years.



This new revolutionary improvement found only in the Walker Royal Purple L-CD Unit and is exclusive—no other make of draft control has it, no other can duplicate it, because patents are pending. This is the only draft control made that can be easily adjusted after one year, two years, three years or more under the worst conditions of soot, dirt and dust. See your jobber or write for catalog of complete line of draft controls and the famous Walker Venturi-Top Chimney Cap.

Walker Manufacturing & Sales Corp.

1730 Penn St. Joseph, Missouri

we hear that . . .



LARRY WILLIAMS (right) presents the December award for outstanding achievement in the fuel oil field to Frank P. Scully, president, Scully Signal Co.

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- FRANK P. Scully, president, Scully Signal Co., was presented with the "Man of the Month" award for notable achievement in the fuel oil field at the December meeting of the Massachusetts Oil Heating Association, Inc. Presentation of the award was made by Larry Williams, president of the Massachusetts association.
- THREE Mueller Climatrol salesmen received diamond pin award certificates at the conclusion of the company's 1954 annual sales conference. Harold P. Mueller, president, presented the certificates to John L. Stewart, Mel James and M. H. Thomas.
- DEALERS for Armstrong Furnace Co. can purchase uniforms for service personnel with the Armstrong trademark combined with their own names embroidered across the backs of jackets, above shirt pockets or above the peaks of caps. The uniforms may be purchased from Elin Mfg. Co., Rochester, Ind.
- MORE THAN 400 dealers spent a week in Bermuda as guests of Stewart-Warner Corp., U. S. Machine Div. The all-expense trips were won by dealers of "Winkler" heating and cooling equipment in a recent sales contest.
- THE FOLLANSBEE METALS CORP. has been formed to operate depots for metals at Pittsburgh, Rochester, N. Y. and Wallingford, Conn. The new corporation, formerly operated as a division of Follansbee Steel Corp., is a new enterprise and has no connection with the former Follansbee Steel Corp. or its successors. It will handle the distribution of stainless steel and aluminum sheets, bars and plates and cold and hot rolled steel sheets. J. H. Dowling is executive vice president of the new corporation.

Guarantee

Carefree Fuel Supply

in Oil Burner Sales

with combination

VENTALARM ® GAUGE

Underwriters' Approved

The famous whistling tank fill signal and easy reading gauge in one money-saving unit. Goes on tank as integral part of vent pipe. Signal case takes the place and saves cost of reducer bushing. One less tank opening needed. One item to install instead of three.

Specify tank depth and opening when ordering.

"BUTTON-LIFT"

Lifting the button indicator draws cork arm up close to main shaft for easy installation even in partly filled tanks.



or the

SCULLY ® GAUGE

Underwriters' Approve

A modern convenience in every way. Big figures, adjustable face, jam-proof lever arm, cork float. Accurate service-free operation.

Specify tank depth when ordering.

and the famous

VENTALARM

WHISTLING TANK FILL SIGNAL

Accurate fuel oil delivery without home entry. Truly automatic fills for the householder. Makes oil supply as clean and convenient as any other fuel.

> A variety of models for new and old tanks.

Scully Products are manufactured under U.S. and foreign patents or patents pending.





"Just fill while the whistle blows."

See your regular Supply House.

SCULLY SIGNAL COMPANY

174 Green St., Melrose 76, Mass.

OHI

- AMERICAN FURNACE Co. has elected five new officers and two additional members to the board of directors. Clarence S. Franke, former president of the company, has been elected to the newly created post of chairman of the board. He is succeeded as president by Charles H. Franke, formerly vice president in charge of sales and business administration. Ernst H. Spellmeyer was named executive vice president. Richard A. Cromwell becomes vice president in charge of the St. Louis area sales and Harry J. Timmerman, formerly purchasing agent of the company, is vice president in charge of purchasing. Elected to the board of directors are Richard A. Cromwell and Dale M. Dassler.
- ▶ REYNOLDS CORP., fabricators of multiblade dampers, breechings, hoods, hoppers and chutes, has moved to 6549 W. George St., Chicago 34. E. B. Brown, Jr. is general manager of the company.
- ALUMINUM COMPANY OF AMERICA'S new building in Cincinnati features colored aluminum curtain walls. The panels used in the construction of the building measure 4 ft in width and range from 8 ft, 5 3/4 in. to 17 ft, 8 in. in length. They are secured to the

building's lightweight steel frame by bolts. Entire thickness of the walls is 6 in.

- THE FIRM of Fraser Associates has been formed to act as manufacturers' representatives for residential heating equipment. The new company is located at 11 E. Turtle Rd., Beloit, and will serve the trading areas of Beloit, Janesville and Madison, Wis. and Rockford and Freeport, Ill. It is now representing Carrier Corp., Pyle National Co. and Electromode Corp.
- ▶ JOHN A. MORGAN has been elected vice president of Glass Fibers Inc. and appointed general manager of the firm's western division. Mr. Morgan was previously sales manager of transportation product sales for the company. In his new position, he will headquarter in the Burbank, Calif. plant and will manage all sales and production operations in the western states.
- THE MAJESTIC Co., INC. is offering its dealers a wall poster illustrating gas, oil and coal fired furnaces as well as cooling units and components. Designed to be an "eye catcher," the poster is printed in three colors, and measures 36 in. wide × 48 in. high. The company also reports that it has brought its service manuals up to date with the addition of 20 new pages which will be sent on request.



VENTURI-FLO ENGINEERED

Ceiling Diffusers

. . . deliver all that's promised!

- Originated in the laboratory of Barber-Colman Company — each unit delivers its full rated capacity as stated in accurate performance data
- High rate of aspiration for efficient diffusion, quiet operation
- Air pattern adjustable after installation from vertical to horizontal discharge
- Designed to minimize ceiling smudging and streaking without use of smudge rings
- Wide range of sizes and styles for recessed or surface mounting, with or without integral lights
- Rigid steel construction—minimizes damage in shipping and during installation



 Available with opposed-blade, gangoperated volume control (adjusted through face of unit), and Deflectrol air turning device (for positive air flow control). Supply and exhoust diffusers also available.



DATA BULLETIN now available. Consult nearby Field Office, or write . . .

Barber-Colman Company
DEPT. N. 1106 ROCK STREET ROCKFORD, ILLINOIS, U. S. A.

NEW HOPE in the battle against CANCER

THE FIGHT against man's cruelest enemy is far from won. If present rates continue, 23 million living Americans will die of cancer—230,000 this year. And thousands of these will die needlessly—through cancer that could have been cured if treated in time.

ALL THE SAME, there have been victories. Thousands who once would have died are being saved—thanks, in part, to your donations to the American Cancer Society.

AND, LAST YEAR, the Society was able to allocate \$5,000,000 of your donations to research aimed at finding the ultimate cure for all cancer. That's more money than ever before.

MUCH MORE, of course, remains to be done. So please make this year's pift a really generous one!

Cancer
MAN'S CRUELEST ENEMY
Strike back—Give
AMERICAN CANCER SOCIETY

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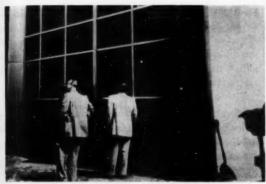
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PORCELAIN ENAMEL panels similar to those to be used in the Ford central staff office building were subjected to wind tunnel tests to determine weather and water tightness

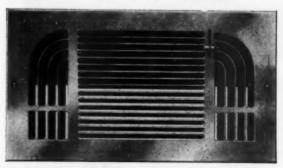
INGRAM-RICHARDSON MFG. Co. has been awarded a contract for the production and erection of 90,000 sq ft of architectural porcelain enamel for the exterior facing of the new Ford central staff office building in Dearborn. To prove their weather resistance, sample panels were recently subjected to a wind tunnel test. A full scale mock-up of a section of the 12 story building, including 18 insulated porcelain enamel panels, architectural aluminum framing and six panels

of plate glass, was erected and a wind tunnel with an airplane engine producing winds of 90 miles per hr was placed before the assembly. Thousands of gallons of water were then introduced into the airstream to simulate a severe rainstorm. The company reports that all components of the assembly passed the test without difficulty.

- REPUBLIC STEEL CORP.'s Truscon Steel Div. is tooling up at its Youngstown plant in preparation for the job of fabricating the stainless steel exterior sheathing and windows for the 42 story Socony-Vacuum building now under construction in New York City. Production of the windows and panels is scheduled to begin in the spring, according to D. K. Forsyth, works manager for the division. Mr. Forsyth estimated that at peak operation, about 200 people will be assigned to the department. One of the factors influencing the selection of stainless steel for the skyscraper is its comparative light weight (approximately 2 lb per sq ft, compared with approximately 48 lb per sq ft for a 4 in. thick brick exterior wall).
- Co., has been elected to the board of directors of York Corp. to fill the vacancy created by the resignation of John E. Hertzler.

Give your heating installations "eye appeal" with the new RAINBOW wall diffuser

By popular demand we have developed this new design for use on either high or low velocity perimeter installations



AVAILABLE FOR IMMEDIATE DELIVERY AT NEW LOW LIST PRICE Order with or without valve for wall, baseboard or out-of-wall installations.

SIZES—10, 12, 14 x 4" 10, 12, 14 x 6"

Ask your jobber for complete details and prices or write direct to:

THE A & A REGISTER COMPANY



PRESS BRAKES

Series A Light Duty Model CHICAGO Press Brake

In the almost limitless variety of operations on sheet metal and steel plate, Chicago Press Brakes are well known for their consistent production performance. The proved all-steel construction and the flexibility of design in all models offer a versatility that is hard to beat. With 42 standard sizes, there is a Chicago steel press brake to suit your requirements.

Full Particulars and Recommendations for Any Job on Request

DREIS & KRUMP

CHICHGO

7404 S. Loomis Blvd., Chicago 36, III.



The ONLY tool that does both.

A complete drive cleating tool . . .

no set-up time . . . no adjustments.

Handy to take out to the job when

not needed in the shop. Turns idle

time into production time. Flanges

any square duct up to 20 gauge.

Quickly pays for itself in time,

material and labor savings.

No. 12 Smith's Cleat Bender

(12" wide) . . \$46.20*

No. 18 Smith's Cleat Bender

(18" wide) . . \$72.60"

*F.O.B. Wuvkegan, Illinois Prices subject to change without notice DRIVE CLEATS
fit the duct without
the use of a screwdriver.
TREMENDOUS SAVINGS
in erection time and labor.

R. E. SMITH

1124 Elizabeth Avenue . Waukegan, Illinois

- AFFILIATED GAS EQUIPMENT, INC. has sold its Bryant Heater Division plant at Cleveland to Eaton Mfg. Co. Affiliated has re-leased the office portion of the Cleveland facility and will maintain its general offices there. Also scheduled to remain in Cleveland are the Bryant Heater sales and engineering offices.
- THE WATERMAN-WATERBURY Co. is conducting a series of service, sales and marketing conferences for its distributors and dealers. Distributors in each city act as hosts to their dealers at the meetings. These traveling meetings represent a change from the company's past policy, when dealers were invited to the firm's home office, according to E. M. Delaney, sales promotion manager. "By going directly into their territories, we feel we can do a better job for our distributors by localizing our material to emphasize the points of greatest importance to each group," he said.
- ▶ ILG ELECTRIC VENTILATING Co. recently completed a four-year modernization program. Before putting the program into effect, a study of all manufacturing operations, materials handling methods, storage and warehousing activities and the entire administrative operation was made. Upon completion of the analysis, a new inventory and production control system was adopted, the production area was expanded and new materials handling methods were put into effect.
- ▶ STUDENTS participating in the Trane Co.'s six month training program receive theoretical instruction covering the various phases of heating, air conditioning and ventilating. In addition, they are given practical instruction on the products they will sell during their training program at the company. After the student has completed his training, he is assigned either to one of the 90 field sales offices in the country or to one of the sales divisions in La Crosse, Wis.
- ▶ HIGHLIGHT of the recent four day product development and merchandising meeting held by Armstrong Furnace Co. was the "boodle barrel." Each man was required to reach into the barrel, pull out a furnace or air conditioner part and tell the gathering what it does and how it should be sold. W. J. Olsen, president, conducted the meeting, assisted by Larry Hickok, vice president, and George Zimbelman, western sales manager.
- THE ALTON MFG. Co. is enlarging its present plant by an additional 6000 sq ft of floor area. The new addition will be used to provide manufacturing facilities for increased production of evaporative cooling units.

easiest installation! lowest operating cost! highest cooling efficiency!

CHILL-AIR

EVAPORATIVE COOLERS

for Home-Business-Industry



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INDUSTRIAL AND COMMERCIAL COOLERS

Model No.	CFM	НР	Cu. Ft. of Space to be cooled	
457	4500	1/2	3,000- 4,000	
709	6800	3/4	3,500- 6,000	
100P	9600	1	7,000-15,000	
150P	15000	2	15,000-30,000	

Above motors 110-220 v, single phase (three-phase motors available on order)

For more than 20 years the complete Chill-Air line of Evaporative Coolers for home, commercial and industrial use have proved their merit in design, construction and performance. Easier installation, servicing and maintenance, plus low operating expense and high cooling efficiency contribute to Chill-Air's evergrowing popularity with contractors and building owners. Chill-Air industrial and commercial coolers are designed for easy installation on the roof or sides of buildings. Available in standard models for reducing temperatures 12-18° in spaces from 3,000 to 30,000 cf. Larger models built to exact specifications.

Uniform, non-clog water distribution troughs and easily removable evaporative pads assure maximum evaporative surface. The 110-220 v. motor can be oiled and serviced by simply removing pads. Recirculating pump systems eliminate water waste.



CHILL-AIR MOR-VIEW

WINDOW COOLERS for rooms, homes, offices, shops, etc. are equipped with window adaptors and come ready for operation. No wiring or holes to cut. Just set in window, connect to waterline and plug into nearest 110 v. outlet.

Single speed models have variable air control damper. Window adaptor extra on Model 45 WP.

FREE

Expineering
Service

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MOR-VIEW COOLERS - 6 Models

Model No.	Max. CFM	HP	Speeds	н	Size	D
20 WP	2000	1/6	4	231/2	27	16
30 WP	3200	1/3	1	39	31	24
32 WP	3200	1/3	2	39	31	24
40 WP	4000	1/3	1	39	33	28
42 WP	4000	1/3	2	39	33	28
45 WP	4500	1/2	1	39	33	28

NATIONAL ENGINEERING & MFG. INC.

Sales Division

SEDALIA, MISSOURI

BACKED BY EXPERIENCE IN MANUFACTURING!

THE NEWEST FIELD FOR APPLIANCE PROFITS!

PACKED WITH SALES FEATURES!

Majestic
HOME INCINERATOR

The Double-Duty UNIT that disposes of BOTH

TRASH

and GARBAGE

Gas-Fired and Fuelless Units Models to Fit Any Pocketbook!



Exclusive Majestic Incinerator features mean a real build-up in dollar volume for you! You can offer extra convenience in an easy-to-buy package—the double-duty unit that ends all problems of trash burning and garbage disposal. The complete Majestic line includes gas-fired and fuelless models, for kitchen, basement, or utility room installation.

Model 10-G illustrated: the automatic gas-fired unit with drying pilot and direct-fire burner. Dimensions: 20" wide, 24" deep, 36\%" high. Capacity: two bushels. Flue: requires 7" smoke pipe outlet and may be used with any chimney flue 6" or larger. Burner: monoport, 18,000 BTU rating, incinerates. Pilot: automatic, 1500 BTU rating, dehydrates. Finish: gleaming white enamel over rust-resisting Poly-Kote base.

For Full Details on Majestic's Line
SEE YOUR JOBBER OR WRITE TODAY

The Majestic Co., Inc.

110-A Erie Street

Huntington, Indiana

He is assisted by Ralph Young.

In to stay when you use



Screwnails

for fastening
SHEET METAL to WOOD
WOOD to WOOD
or other fastenings
where you need

NAIL DRIVING SPEED with SCREW HOLDING POWER

Ask your P-K Distributor for samples and the SCREWNAIL folder, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
FASTENERS

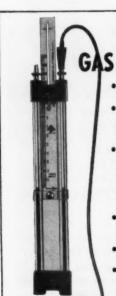
BACHARACH PRESSURE GAUGE



- Scale features easy readability; made of white plastic, with black scale divisions and numerals; 1/10" W scale divisions.
- Indicating Fluid of 1.9 specific gravity permits pressure readings to 1/10" W over entire scale on gauge of convenient size. Fluid is colored blue for visibility; is non-freezing to low temperature. Gauge is furnished filled ready for use.
- Shut-off Valves are conveniently opened or closed by rotation of knurled discs.
- Scale is adjustable up or down to permit direct reading of pressure.
- Blow-over seal automatically prevents spilling of fluid when gauge is subjected to pressure surges in excess of scale range.
- Body serves as reel for rubber hose.
 For convenient attachment of
- For convenient attachment of gauge to gas pipe an adjustable mounting clamp is available as optional accessory.

Ask your Jobber or write for Leaflet 830

BACHARACH INDUSTRIAL INSTRUMENT COMPANY 7301 Penn Avenue, Pittsburgh 8, Pa.



Gauge supplied with 4 ft. rubber hose and fitting for test connection.

Gauge with scale 0.7" W \$11,00 TRADE NET Gauge with reversible scale — 0.15" W on one side, and 0.8.5 ounces per sq. in. on other side. THE FAMOUS FURNACE Co., Cleveland wholesaler, has opened its eighth branch warehouse. The new outlet, known as the Famous Furnace and Supply Co., is located at 35 Pittsburgh St., Uniontown, Pa. Frank Livingston is manager of the new warehouse.

J. H. DEVOR, president, Wagner Electric Corp., was recently appointed a regional vice president in the Midwest Div., National Association of Manufacturers. Nearly 400 member manufacturers are located in the Midwest division which covers 11 states and has three regional vice presidents.

- MINNEAPOLIS-HONEYWELL Regulator Co. recently opened a new office building at 24-30 Skillman Ave., Long Island City. It will serve as the firm's eastern regional headquarters covering New Jersey, New York and all of New England.
- ▶ THE Los Angeles and Milwaukee district offices of Penn Controls, Inc. have recently changed their addresses. New address of the Los Angeles office is 333 Glendale Blvd. The Milwaukee office is now 5409 W. Vliet St.



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William Kase

WILLIAM F. Bowen as district office manager for the St. Louis territory for Penn Controls, Inc., replacing R. L. Persons who recently resigned. Prior to joining the company, Mr. Bowen served as sales engineer for the White-Rodgers Electric Co., as regional sales director for the heating division of Fairbanks Morse Co., and more recently as sales representative for Morrison Steel Products, Inc. William Kase has been named sales engineer for the company's North Bergen, N. J. district office. Mr. Kase was previously a sales engineer for General Controls Co. in the Long Island City, N. Y. area.



Weaver E. Falberg



John A. Houston

- WEAVER E. FALBERG as general manager of sales and John A. Houston as assistant general manager of sales for Joseph T. Ryerson & Son, Inc. Mr. Falberg has been with the firm since 1936, has served as manager of stainless steel sales for the Chicago plant, manager of the alloy steel division and prior to his recent promotion, as assistant general manager of sales for all 16 of the company's plants. Mr. Houston was previously assistant sales manager of the Chicago plant.
- P. W. WYCKOFF as chief engineer of Airtemp Div., Chrysler Corp. Mr. Wyckoff joined the company's institute of engineering in 1939. Upon graduating he became a project engineer with the central engineering fuel systems laboratory. In 1946 he became director of the engineering laboratory, following which he was named assistant chief engineer, the post he held until his recent promotion. (Mr. Wyckoff is the author of two articles on air conditioning that were published in the August and September issues of American

Make Stronger Fastenings this easy way



P-K

Hardened

Masonry Nails

DRIVE EASILY into mortar, cinder blocks, and other soft masonry without pilot holes . . . into predriled holes in harder materials. HARDNESS and TOUGHNESS perfectly balanced . . they drive in straight to stay tight, even under thock or vibration.

to use than plugs, expansion bolts, other devices. Samples free . . . try them. Ask your P-K Distributor, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®

FASTENERS



STANDARD IN THE FIELD

Superior features of Tharco-

- · No Shrinking
 - . No Cracking
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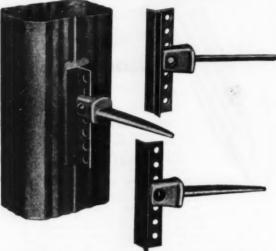
THARCO is available in either black or light gray in 1-pound cans to 350 pound drums.

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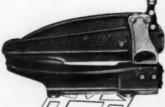
These high grade, inexpensive fasteners take less time to put in, make a more secure and permanent installation. Pipe stands ½" away from wall. Cadmium plated malleable iron drive bolts to galvanized or copper perforated clip. Write for details and prices.

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Make any cutcurved, straight or irregular, faster, easier and better with less material waste on a Beverly Throatless Shear. You can turn work to any position and make a clean cut as you go. Handles heavy gauges with ease – lighter metals without distortion. 4 models-capacities 18 gauge to 3/16" mild.





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Makes Inside slotting cutting faster, easier, cleaner. Punch and die arrangement of 5 blades assures accuracy, clean cutting action. Cuts 212" x 13" or 213" x 14" or slot at one stroke. Throat design permits pivoting work at any point in stroke for special inside cuts. Note sample cuts at left

See your Beverly Dealer or write for illustrated catalog.

Severly SHEAR MFG. CO. 3020 W. 111TH STREET . CHICAGO 43, ILLINOIS

Artisan.) R. L. Brugler has been named assistant chief engineer in charge of design operations. R. W. Kelto is the new assistant chief engineer in charge of laboratory operations, filling two newly created positions. The Lincoln Sales Corp., 1307 St. Paul St., Baltimore, has been appointed exclusive distributor for the division's residential and commercial air conditioning equipment. The new distributor covers the state of Maryland and portions of West Virginia.

- ▶ GEORGE F. ROBINSON, formerly manager of Carrier Corp's St. Louis unitary equipment branch sales office, as assistant sales manager for residential air conditioning equipment. Mr. Robinson will make his headquarters in Syracuse.
- FISHER OIL Co., Muncie, Ind., as a retailer of "Weathertron" heat pumps for the General Electric Co. The Fisher company will handle distribution in Delaware County, Ind.
- ▶ E. R. STEVENS as executive vice president and M. M. Wilson as vice president in charge of sales for the Baldwin-Hill Co. Mr. Stevens will direct manufacturing and sales activities for all plants and divisions of





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Stainless steel construction. Drip-feed puts just enough water in pan for fastest vaporization. Eliminates scum . . . no stagnant water pan.

Pre-assembly cuts labor time and costs. To install simply cut hole in plenum wall, slip VAPORITE in just as it comes from shipping package. Get complete information. Write. A-2

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These Insto-Gas soldering irons are designed for continuous operation with no stopping to change irons. Made in two sizes; the No 1-S (2) for fine work and the No 2-S (5) for heavy soldering.

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appointments

(Continued)

the company. Mr. Wilson was formerly general manager of the industrial sales division.

▶ FRED J. BLACKER as manager of original equipment sales for the Air Conditioning and Refrigeration Div., Worthington Corp. Mr. Blacker joined the firm in 1923, has served as sales engineer at the St. Paul and Pittsburgh district offices and as manager of the Wilmington branch. Prior to his recent promotion he was northeastern regional distributor supervisor.



Fred J. Blacker

Walter R. Dwyer

- WALTER R. DWYER as eastern regional air conditioning manager for Servel, Inc. Mr. Dwyer, formerly zone sales manager in the Pittsburgh area, is now in charge of air conditioning sales and service in 14 eastern states, with headquarters in New York.
- W. S. DEGARIMORE as district representative for the Heating and Air Conditioning Div., Perfection Stove Co. Mr. Degarimore will cover Oklahoma and Texas, from headquarters in Houston.







John P. Regan

- JOHN P. REGAN, formerly with the St. Louis branch of Inland Steel Products Co., as sales representative in northeastern Illinois for the company.
- ▶ THE ELLIOT-LEWIS CORP., 16th and Hamilton Sts., Philadelphia, as a distributor of room air conditioners for Fedders-Quigan Corp.
- J. A. WALSH & Co., Houston, as distributor of packaged residential air conditioning equipment in the metropolitan area for Worthington Corp.





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THE COMPLETE HEATING SUPPLY HOUSE ST. LOUIS 3, MO. 2100 WASHINGTON AVE.

H. FORREST OAKES as national sales manager for Automatic Devices Co., Inc. Mr. Oakes will supervise and coordinate sales, promotion and advertising through distributors and dealers. Previously he was with Ingersoll Products Div. and Norge Heat Div. of Borg-Warner Corp.



appointments



H. Forrest Oakes

- B. E. Bostwick as vice president in charge of sales and advertising of J. Wiss & Sons Co. Mr. Bostwick has been with the company for 27 years and was formerly general sales manager.
- JOHN BELHAM as sales manager for General Fittings Co. During the three years he has been with the company, Mr. Belham has been responsible for sales in the southern New England area and has also been engaged in new product development and promotion. John J. Cotter has been appointed sales representative to cover Maine, New Hampshire and part of Massachusetts.





John Belham



Vance Smith

- VANCE SMITH as manager of all operations for the Utility Fan Corp. Until his recent promotion, Mr. Smith was assistant manager of the company.
- WILIAM CROCKETT as sales representative for Mitchell Mfg. Co., handling the sale of room air conditioners in Michigan, Ohio and northern Indiana.
- EDWIN K. OHSE as manager of the Sheet Metal, Warm Air Heating and Air Conditioning Div., the Dallman Co. The division was recently formed by the company to take over the sales of sheet metal products,



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No question about the WEBCO saving

you time and money. It's been designed to handle 20 gauge mild steel on a You can't beat the WEBCO for duct work and special fabrication. Please

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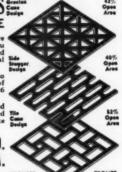
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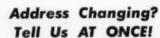
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THERMAL AGENCY

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warm air furnaces and air conditioning equipment. James Allan has been named manager of the Fresno branch, replacing Mr. Ohse.

HOWARD H. HILDRETH as manager of the newly formed product development department for Washington Steel Corp. The new department will consolidate some of the functions of the research and metallurgical department, the sales department and the planning committee. One of its many activities will be to further the development of stainless steel curtain wall panels.







Art DePuy

ART DEPUY as assistant regional manager of Minneapolis-Honeywell Regulator Co.'s central sales region, with headquarters in Cleveland. He has been with the company since 1936, serving in various administrative sales positions including manager of the Detroit and Cincinnati sales offices. For the past year he has headed a trade division in charge of coordinating activities within the company's heating control division.

▶ Jack Hewson, formerly publicity manager, as director of public relations for Servel, Inc. Mr. Hewson joined the company in 1946 as assistant advertising and sales promotion manager, and was made publicity manager in 1950. Before joining Servel, he worked for the editorial departments of newspapers in Evansville, Indianapolis and Detroit, and for advertising agencies in those cities.

Obituary

Harold G. Flagler

HAROLD G. FLAGLER, vice president of the Lockformer Co., died January 6 of injuries suffered in an automobile accident near Delray, Fla. Mr. Flagler entered the sheet metal field as an apprentice, became a journeyman, layout man and finally a foreman. He developed the original lock forming machine in 1937 and founded Lockformer Co. in the same year. Services were held in both Delray and Chicago.

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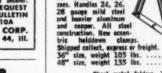
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INDEX TO ADVERTISERS

		N .	
A & A Register Co., The 153	Delco Appliance Div., General	Little Giant Vaporizer Co *	Sall Mountain Co., The *
A-J Mfg. Co 10	Motors Corp*	Lockformer Co., The 9	San Angelo Foundry & Ma- chine Co
A-P Controls Corp * Adams Co., The 163	Motors Corp *		Schaefer Brush Mfg. Co 74
Adams Mfg. Co *	Delta Heating Corp 163	Maid-O'-Mist, Inc	Schaefer Brush Mfg. Co. 74 Scully Signal Co. 151 Sequoia Mfg. Co. 72
Adelta Mig. Co., Inc *	Detroit Controls Corp 40	Majestic Co., Inc., The 155 Malco Products*	Servel, Inc
Advance Furnace Co., The * Aerofin Corp *	Diamond Mfg. Co 163 Dieckman Co., Ferdinand, The 159	Marley Co., The *	Skil Corp 123
Air Controls, Inc., Div. of the	Dowagiac Steel Furnace Co *	Marshalltown Mfg. Co * Maxitrol Co *	Smith Corn A O
Cleveland Heater Co * Air Control Products Inc 66	Doyle Vacuum Cleaner Co * Dreis & Krump Mfg. Co 154	Meyer & Bro. Co., F *	Skil Corp. 123 Skuttle Mfg. Co. 8 Smith Corp. A. O. 133 Smith, R. E. 154 Southers, Mist Bredwetz Co. 154
Airtemp Div., Chrysler Corp 110	Duro-Dyne Corp 136	Meyer Furnace Co., The *	
Ajax Furnace Fitting Co., Div.		Midco Register Corp 7 Mid-Continent Metal Products	Southwest Mfg. Co
Cincinnati Sheet Metal & Roofing Co *	Elgen Mfg. Corp 116	Co	ing Co
Allegheny Ludlum Steel Corp.	Elgo Shutter & Mfg. Co *	Miller & Doing 164 Miller Product Co *	Sterling Air Conditioning Corn
Allen Co., Inc., L. B 162	Empire Ventilation Equipment	Milwaukee Gas Specialty Co. *	Stewart-Warner Corp., U. S.
Allen Cooler & Ventilator Inc. *	Evans Corp., The George 73	Minneapolis-Honeywell Regu- lator Co 35, 36, 125, 126	Machine Div
American Air Filter Co., Inc. * American Brass Co., The *	Excelsior Steel Furnace Co.,	Mitchell Mfg. Co 67	Sunbeam Air Conditioner Div., American Radiator & Stand-
American Radiator & Standard	The	M-M-A, Inc *	ard Sanitary Corp 38, 39
Sanitary Corp 38, 39		Modern Materials Co 158 Modine Mfg. Co 129	Sundstrand Engrg. Co. 12 Sundstrand Machine Tool Co.,
Anchor Post Products, Inc., Fluid Heat Div	Fallsington Mfg. Co	Morey, Dan 160	
Anemostat Corp. of America . *	Field Control Div. of H. D. Conkey & Co 51	Morrison Products, Inc. * Morrison Steel Products, Inc. *	Sun-Ray Burner Mfg. Corp. * Superior Metal Fabricating Co. *
Armco Steel Corp *	Firewel Co., The 161	Morse-Smith-Morse, Co., The *	Surface Combustion Corp 45 Swartwout Co., The
Armstrong Co., The 157 Armstrong Furnace Co 23	Franck & Fric 158	Mueller Climatrol Division of	Syncromatic Corp
Auer Register Co., The *	Franck & Fire	Worthington Corp 5	
Auto-Flo Corp. * Automatic Humidifier Co 159			Tecumseh Products Co 69
Automatic standards co	Galvan Mfg. Co 162	National Engineering & Mfg.	Thatcher Furnace Co
	General Automatic Products Corp	National Grille & Register Co. *	Thermal Agency 163
Bacharach Industrial Instru- ment Co	General Controls Company 131	National Lock Company 146 National Metal Fabricators 150	Thermo-Base Div., Gerwin In- dustries Inc 128
Banner Burner Company 164	General Electric Co. 53, 54, 55	National Super Service Co.,	Thompson & Co
Barber-Colman Co 152	General Filters, Inc *	Inc*	Thor Metal Products Co., Inc. * Thor Tool & Die Co *
Barkow Mfg. Co., August G. 34	Gerett Corp., M. A 161 Gibson Industries *	Nelson, Herman Div. of American Air Filter Co., Inc *	Timken Silent Auto. Div.,
Beckett Corp., R. W *	Glass Fibers, Inc 143	Niagara Furnace Div.,	Rockwell Spring & Axle Co. *
Berger Bros. Co * Berger Furnace Co *		Forest City Foundries Co.	Titus Inc 16, 17 Toridheet Div., Cleveland Steel
Berger Mig. Div., Republic	Hallmor Inc 163	Niagara Machine & Tool Works 119	Products Corp *
Steel Corp * Bethlehem Steel Co *	Hall-Neal Furnace Co 33	Norman Products Company 61	Turner Brass Works, The * Tuttle & Bailey, Inc *
Bett-Marr Manufacturing Co. *	Halstead & Mitchell 44	Nu-Way Corp 8	Typhoon Air Conditioning Inc. *
Beverly Shear Mfg. Co 158	Hart & Cooley Mfg. Co 18, 156 Heil Co., The 124		
Boston Machine Works Co * Brandes Company	Henry Furnace Co., The 63	Ohio Valley Hardware Co. Inc 132	United States Air Conditioning
Brauer Supply Co., A. G 162	Hexdall Co., A. M 147 Hussey & Co., C. G *	Olsen Mfg. Co., C. A., The . 13	Corp 135 United States Register Co 56
Bremil Mfg. Co	Hussey & Co., C. G	Owens Co., H	United States Steel Corp.
Bryant Heater Div.,		Tibergias Corp.	U. S. Steel Supply Div.,
Affiliated Gas Equipment, Inc 14, 15	Illinois Iron & Bolt Co., Free- man Heating Div	Packard Elec. Div., General	United States Steel Corp *
Burgess Thomas Co 161	Independent Register Co., The *	Motors Corp*	Universal Diffuser Corp 142 Utility Appliance Corp 3
Burt Mfg. Co., The *	Inland Steel Co* Inland Steel Products Co	Parker-Kalon Div., General	and approach to the second second
	Insto-Gas Corp 160	American Transportation Corp 46, 156, 157	Van Packer Corp *
Carey Electronic Engineering	International Heater Co * International Nickel Co., The . *	Park Sheet Metal Specialties *	Viking Air Conditioning Corp. *
Co., Metal Wool Div * Carnes Co., W. R *	Iron Fireman Mfg. Co *	Patco Mfg. Co	Vyke Mfg. Co 165
Carrier Corp*		Peck, Stow & Wilcox Co., The 144	Walker Mfg. & Sales Corp 150
Central-West Machinery Co 165 Century Electric Co 11	to to a Charact Co	Peerless Electric Co., The 28 Peerless Furnace & Foundry,	Wallace Co., William 138
Century Eng. Corp *	Jackson & Church Co	Inc *	Washington Steel Corp * Waterman-Waterbury Co., The 68
Champion Furnace Pipe Co	Janitrol Div. Surface Combus-	Penn Controls, Inc 62 Perfection Stove Co 70	Wayne Home Eqpt. Co
Chase Brass & Copper Co 71	tion Corp 45 Johns-Manville *	Perfection Stove Co 70 Perfex Corp	Weirton Steel Co * Westinghouse Electric Corp.,
Chelsea Fan & Blower Co.,	Johnson Co., S. T *	Petro	Air Conditioning Div 64, 65
Chevrolet Motor Div., General	Johnson Ladder Shoe Co 165 Juniper Elbow Co., Inc 165	Premier Co. ** Premier Furnace Co	Westinghouse Electric Corp.,
Motors Corp.			Sturtevant Div
Circulataire Div., Corlett-Turn-		Quickdraft Co., Div., Herring-	White-Rodgers Elec. Co.
er Co*	- 111	Hall-Marvin Safe Co 159	Whitney Mfg. Co., W. A 159
Clarage Fan Co	Kaustine Furnace & Tank	Quiet Automatic Burner Corp. *	Whitney Metal Tool Co
Condensation Engineering	Corp 57 Kennard Corporation *		Williams Division, Eureka Wil-
Connor Engrg. Corp.	Kett Tool Co., Inc., The 34	Randall Graphite Bearings, Inc	liams Corp. Williamson Heater Co., The 26, 27
Copeland Refrigeration Corp 4	Kirk & Blum Mfg. Co., The *	Reiner & Campbell Co., Inc. , 165	Wilson, Inc., Grant
Crane Co 24, 25	Ko-Z-Aire Products, Inc.	Reliable Gas Products Co *	Wisconsin Oil Burner Co
Crise Controls Div., Acro Mfg.	,	Republic Steel Corp 42, 43 Revere Copper & Brass, Inc. 105	Wiss & Sons Co., J 118
Co		Reynolds Metals Co 115	
Crucible Steel Co. of America Curtis Refrigerating Machine	LaCrosse Steel Roofing & Corrugating Co	Reznor Mfg. Co	Worthington Corp.
Div. of Curtis Mfg. Co	Lennox Furnace Co 106, 107	Richmond Radiator Co *	Wysong & Miles Co 41
	Libbey-Owens-Ford Glass Co., Fiber Glass Div *	Round Oak Company 133	Zatko Metal Products Co *
Dahlstrom Machine Works,	Lima Register Company 37	Royal Jet, Inc *	Zink Co., John
Inc	Lincoln Electric Co., The	Ryerson & Son, Inc., Jos. T. 78	Inside Dack Cover

Firms represented in this issue are identified by the folio of the page on which their advertising appears. Advertising which appears in other issues is marked with an asterisk.



75

39 12

.

69

34

28

17

*

56

77

142

165

150

138

68

65

27

118

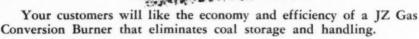
31 41

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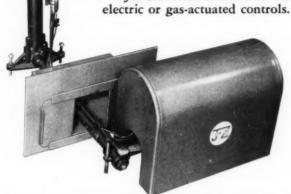
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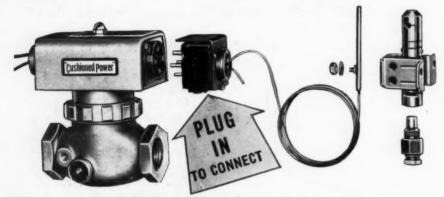


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